

PLINY

NATURAL HISTORY

WITH AN ENGLISH TRANSLATION
IN TEN VOLUMES

VOLUME IX

LIBRI XXXIII-XXXV

BY

H RACKHAM, M A

FELLOW OF CHRIST'S COLLEGE, CAMBRIDGE



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INTRODUCTION

Books XXXIII, XXXIV, and XXXV of Pliny's Natural History contain interesting accounts of minerals and mining and of the history of art

Mr H Rackham left when he died a translation in typescript with a few footnotes The Latin text has been prepared by Prof E H Warmington, who has also added the critical notes on this text, many footnotes on the translation, and marginal helps Some parts of the translation were completely re-written by him The sections on Greek art were read and criticised by Prof T B L Webster, to whom thanks are now duly rendered

The *codices* cited in the critical notes on the Latin text are as follows *B* = Bambergensis, *cd Leid Voss* = V, *cd Leid Lips* = F, *cd Chifflet(etus)* = f, *cd Flor Ricc* = R, *cd Par Lat 6797* = d, *cd Par 6801* = h, *cd Vind CCXXXIV* = a, *cd Tolet* = T

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PLINY :
NATURAL HISTORY
BOOK XXXIII

PLINII NATURALIS HISTORIAE

LIBER XXXIII

I Metalla nunc ipsaeque opes et rerum pietia dicentui, tellurem intus exquirente cura multiplici modo, quippe alibi divitis foditui ¹ quaeerente vita aurum, argentum, electum, aes, alibi delicias gemmas et parietum lignorumque ² pigmenta, alibi temeritati ferrum, auro etiam gratus inter bella caedesque persequimur omnes eius fibras vivinusque super excavatam, mirantes dehiscere aliquando aut intremescere illam, ceu vero non hoc indignatione sacrae
2 parentis expiui possit imus in viscera et in sede manium opes quaerimus, tamquam parum benigna fertilique qua calcatur, ³ et inter haec minimum remedium gratia scrutamur, quoto enim cuique fodiendi causa medicina est? quamquam et hoc summa sui parte tribuit ut fruges, larga facilisque in

¹ ante quippe transferendum aut fodinis vel e fodinis legendum con Mayhoff

² lignorumque (vel signorumque) Mayhoff pictorum Detlefsen digitorumque cdd (recte?) delicias parietum digitorumque gemmas et pigmenta Bergh

³ Vll caecatur, cecatur, secatur

^a *Electrum*, properly amber, was a word applied to an alloy of gold and silver, and also to native argentiferous gold, be cause of their resemblance in colour

PLINY NATURAL HISTORY

BOOK XXXIII

I Our topic now will be metals, and the actual *Metals* resources employed to pay for commodities—resources diligently sought for in the bowels of the earth in a variety of ways. For in some places the earth is dug into for riches, when life demands gold, silver, silver-gold ^a and copper, and in other places for luxury, when gems and colours for tinting walls and beams are demanded, and in other places for rash valour, when the demand is for iron, which amid warfare and slaughter is even more prized than gold. We trace out all the fibres of the earth, and live above the hollows we have made in her, marveling that occasionally she gapes open or begins to tremble—as if forsooth it were not possible that this may be an expression of the indignation of our holy parent! We penetrate her inner parts and seek for riches in the abode of the spirits of the departed, as though the part where we tread upon her were not sufficiently bounteous and fertile. And amid all this the smallest object of our searching is for the sake of remedies for illness, for with what fraction of mankind is medicine the object of this delving? Although medicines also earth bestows upon us on her surface, as she bestows corn, bountiful and

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3 omnibus, quaecumque prosunt illa nos peremunt, illa nos ad inferos agunt, quae occultavit atque demersit, illa, quae non nascuntur repente, ut ¹ mens ad inane evolans reputet, quae deinde futura sit finis omnibus saeculis exhaustiendi eam, quo usque penetiatura avaritia quam innocens, quam beata, immo vero etiam delicata esset vita, si nihil aliunde quam supia teras concupisceret, breviterque, nisi ² quod secum est!

4 II Eivntui aurum et chrysocolla iuxta, ut pretiosior videatur, nomen ex auro custodiens parum enim erat unam vitae invenisse pestem, nisi in pretio esset auri etiam sanies quaerebat argentum avaritia, boni consuluit interim invenisse minium iubentisque terae excogitavit usum heu prodiga ingenia, quot modis auximus pretia ieiun¹ accessit ais picturae, et aurum argentumque caelando carius fecimus didicit homo naturam provocare auxere et artem vitiorum invitamenta, in poculis libidines
5 caelare iuvat ac per obscenitates bibere abiecta deinde sunt haec ac ³ sordere coepere, ut ⁴ auri argentique minium fuit murrina ex eadem tellure et crystallina effodimus, quibus pretium faceret ipsa fragilitas hoc argumentum opum, haec vera luxu-

¹ repente ut *Mayhoff* ut repente aut repente

² *Vl* haberetque non nisi

³ ac *Mayhoff* abs *B* et *rell*

⁴ ut *Mayhoff* et

^a *Χρυσσκόλλα*, 'gold solder' This is malachite, basic copper carbonate

^b See §§ 111 ff

^c Or possibly finest agate

generous as she is in all things for our benefit! The things that she has concealed and hidden underground, those that do not quickly come to birth, are the things that destroy us and drive us to the depths below, so that suddenly the mind soars aloft into the void and ponders what finally will be the end of draining her dry in all the ages, what will be the point to which avarice will penetrate. How innocent, how blissful, nay even how luxurious life might be, if it coveted nothing from any source but the surface of the earth, and, to speak briefly, nothing but what lies ready to her hand!

II Gold is dug out of the earth and in proximity to *Gold* it gold-solder, which still retains in Greek a name ^a derived from gold, so as to make it appear more precious. It was not enough to have discovered one bane to plague life, without setting value even on the corrupt humours of gold! Avarice was seeking for silver, but counted it a gain to have discovered cinnabar ^b by the way, and devised a use to make of red earth. Alas for the prodigality of our inventiveness! In how many ways have we raised the prices of objects! The art of painting has come in addition, and we have made gold and silver dearer by means of engraving! Man has learnt to challenge nature in competition! The enticements of the vices have augmented even art. It has pleased us to engrave scenes of licence upon our goblets, and to drink through the midst of obscenities. Afterwards these were flung aside and began to be held of no account, when there was an excess of gold and silver. Out of the same earth we dug supplies of fluor-spar ^c and crystal, things which their mere fragility rendered costly. It came to be deemed the proof

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- riae gloria existimata est, habere quod posset statim
 perire totum nec hoc fuit satis turba gemmarum
 potamus et zmyagdis teximus calices, ac temulentiae
 causa tenere Indiam iuvat aurum iam accessio est
 6 III utinamque posset e vita in totum abdicari
 [sacrum fame, ut celeberrimi auctores dixere]¹
 proscissum conviciis ab optimis quibusque et ad peini-
 ciem vitae repertum, quanto feliciore aevo, cum res
 ipsae permutabantur inter sese, sicut et Thioanis
 temporibus factitatum Homero credi convenit² ita
 enim, ut opinor, commercia victus gratia inventa³
 7 alios corus boum, alios ferro captivisque res⁴ empti-
 tasse tradit quare,⁵ quamquam ipse iam mirator
 auri,⁶ pecore⁶ aestimationes rerum ita fecit, ut c
 boum arma aurea permutasse Glaucum diceret cum
 Diomedis armis viii boum ex qua consuetudine
 multa legum antiquarum pecore constat etiam
 Romae
 8 IV Pessimum vitae scelus fecit qui primus induit
 digitis, nec hoc quis fecerit traditur nam de Pro-
 metheo omnia fabulosa arbitror, quamquam illi
 quoque ferreum anulum dedit antiquitas vinculumque
 id, non gestamen, intellegi voluit Midiae quidem
 anulum, quo circumacto habentem nemo cerneret,

¹ *Seclusit J. Müller*

² *inventa cđ Par 6801 in vecta rell*

³ *res Detlefsen merum con Ian vinum Bergk rebus
codd (rerus B¹ rerū B²)*

⁴ *quare Mayhoff quā B² quā B¹ om rell*

⁵ *Vl miratus auri*

⁶ *pecore Mayhoff pec B¹ pec B² et aut om rell*

^a The MSS here insert a clause ('accursed by hunger, as very famous writers have said') adapted from Virgil's famous phrase in *Aen* III 57 'auri sacra fames'

of wealth, the true glory of luxury, to possess something that might be absolutely destroyed in a moment. Nor was this enough. We drink out of a crowd of precious stones, and set our cups with emeralds, we take delight in holding India for the purpose of tippling, and gold is now a mere accessory. III And would that it ^a could be entirely banished from life, reviled and abused as it is by all the worthiest people, and only discovered for the ruin of human life—how far happier was the period when goods themselves were interchanged by barter, as it is agreed we must take it from Homer ^b to have been the custom even in the days of Troy. That in my view was the way in which trade was discovered, to procure the necessities of life. Homer relates how some people used to make their purchases with ox-hides, others with iron and captives, and consequently, although even Homer himself ^c was already an admirer of gold, he reckoned the value of goods in cattle, saying that Glaucus exchanged gold armour worth 100 beeves with that of Diomedes worth 9 beeves. And as a result of this custom even at Rome a fine under the old laws is priced in cattle.

IV The worst crime against man's life was *Gold rings* committed by the person who first put gold on his fingers, though it is not recorded who did this, for I deem the whole story of Prometheus mythical, although antiquity assigned to him also an iron ring, and intended this to be understood as a fetter, not an ornament. As for the story of Midas's ring, which when turned round made its wearer invisible,

^b Homer, *Il* VII 472 ff

^c *Il* VI 234-6

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9 quis non etiam fabulosiorem fateatur¹ manus et
prorsus sinistrae maximam auctoritatem conciliavere
auro, non quidem Romanae, quarum¹ in moie ferrei
erant ut² virtutis bellicae insigne

De regibus Romanis non facile dicimus nullum
habet Romuli in Capitolio statua nec praeter Numae
Servique Tulli alia ac ne Lucii quidem Bruti hoc
in Tarquinius maxime miror, quorum e Graecia fuit
origo, unde hic anulorum usus venit, quamquam
10 etiam nunc Lacedaemone ferreo utuntur sed a
Pisico Tarquinio omnium primo filium, cum in
praetextae annis occidisset hostem, bulla aurea
donatum constat, unde mos bullae duravit, ut
eorum, qui equo meruissent, filii insigne id haberent,
ceteri lorum, et ideo miror Tarquinii eius statuam
sine anulo esse quamquam et de nomine ipso
ambigi video Graeci a digitis appellavere, apud nos
pisci ungulum vocabant, postea et Graeci et nostri
11 symbolum longo certe tempore ne senatum quidem

¹ romani quorum *cd Par* 6801

² ut *Hardoun* et

^a *Sinistra* suggests 'unlucky,' 'sinister'

^b One of the two first consuls (509 B C), not a king

^c The white toga with a purple border worn by free born boys at Rome until they were declared to be of age, between 14 and 16, and assumed the *toga pura* or *virilis*, the white woollen cloak of the Roman citizen

^d *Δακτύλιος*, from *δακτυλος*

who would not admit this to be more mythical still? It was the hand and what is more the left ^a hand, that first won for gold such high esteem, not indeed a Roman hand, whose custom it was to wear an iron ring as an emblem of warlike valour.

As to the Roman kings I find it hard to make a statement. The statue of Romulus in the Capitol has nothing, nor has any other king's statue excepting those of Numa and Servius Tullius, and not even that of Lucius Brutus ^b. I am especially surprised at this in the case of the Tarquins, who came originally from Greece, the country from which this fashion in rings came, although an iron ring is worn in Sparta even at the present day. But of all, Tarquinius Priscus, it is well known, first presented his son with a golden amulet when while still of an age to wear the bordered robe ^c he had killed an enemy in battle, and from that time on the custom of the amulet has continued as a distinction to be worn by the sons of those who have served in the cavalry, the sons of all others only wearing a leather strap. Owing to this I am surprised that the statue of that Tarquin has no ring. All the same, I notice that there is a difference of opinion even about the actual word for a ring. The Greek name ^d for it is derived from the word meaning a finger, with ourselves, in early days it was called 'ungulus,' ^e but afterwards both our people and the Greeks give it the name of 'symbolum' ^f. For a long period indeed, it is quite

*Rings and
brooches in
the Roman
monarchic
period*

^a The word survives in fragments of early poetry

^f Greek σύμβολον, originally meaning two parts of a coin or other object broken in half to serve as a means of identification because tallying when put together, and so the word was used to denote any token or symbol

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Romanum habuisse aureos manifestum est, siquidem
 is tantum, qui legati ad exterarum gentes ituri essent,
 anuli publice dabantur, credo, quoniam ita exterorum
 honoratissimi intellegebantur neque alius uti mos fuit
 quam qui ex ea causa publice acceperant, volgoque sic
 triumphabant et, cum corona ex auro Etrusca sus-
 tineretur a tergo, anulus tamen in digito ferreus erat
 aequae triumphantis et servi prae¹ se coronam sus-
 12 tintentis sic triumphavit de Iugurtha C. Marius
 aureumque non ante tertium consulatum sumpsisse
 traditur. In quoque, qui ob legationem acceperant
 aureos, in publico tantum utebantur is, intra domos
 vero ferreis, quo argumento etiam nunc sponsae
 muneris vice ferreus anulus mittitur, isque sine
 gemma equidem nec Iliacis temporibus ullos fuisse
 anulos video. nusquam certe Homerus dicit, cum
 et codicillos missitatos epistularum gratia indicet et
 conditas arcis vestes ac vasa aurea argenteaque et
 eas colligatas² nodi, non anuli, nota sortium quoque
 contra provocationes duces non anulis tradit, fabricae
 etiam deum fibulas et alia muliebris cultus, sicut

¹ prae se *Mayhoff* (qui et forte *con*) fortasse *cdd del*
edd vet

² consignatas *con* *Mayhoff*

^a *I* e by the future bridegroom, it was called *anulus pronubus*

^b *Il* VI 168-9

^c *Od* VIII 424, 438-41, 443, 447

^d *Il* VII 171, 175, *κλήροι* 'lots,' were moulded out of clay, but it is not said that they were marked with the chiefs' signet rings

^e Hephaestus See *Il* XVIII 400 ff

clear, not even members of the Roman senate had gold rings, inasmuch as rings were bestowed officially on men about to go as envoys to foreign nations, and on them only, the reason no doubt being that the most highly honoured foreigners were recognized in this way. Nor was it the custom for any others to wear a gold ring than those on whom one had been officially bestowed for the reason stated, and customarily Roman generals went in triumph without one, and although a Tuscan crown of gold was held over the victor's head from behind, nevertheless he wore an iron ring on his finger when going in triumph, just the same as the slave holding the crown in front of himself. This was the way in which Gaius Marius celebrated his triumph over Jugurtha, and it is recorded that he did not assume a gold ring till his third tenure of the consulship. Those moreover who had been given gold rings because they were going on an embassy only wore them in public, but in their homes wore iron rings, this is the reason why even now an iron ring and what is more a ring without any stone in it is sent as a gift to a woman when betrothed. Indeed I do not find that any rings were worn in the Trojan period, at all events Homer nowhere mentions them, although he shows that tablets^b used to be sent to and fro in place of letters, and that clothes and gold and silver vessels were stored away in chests^c and were tied up with signet-knots, not sealed with signet-rings. Also he records the chiefs as casting lots about meeting a challenge from the enemy without using signet-rings^d, and he also says that the god^e of handicraft in the original period frequently made brooches and other articles of

*and in the
Republican
period*

Jan 1,
104 B C
103 B C

*Rings in
Homer*

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- maures, in primordio factitasse, sine mentione
 13 anulorum et quisquis primus instituit, cunctanter
 id fecit laevis manibus latentibusque induit, cum,
 si honos securus fuisset, dextra fuerit ostentandus
 quodsi impedimentum potuit in eo aliquod intellegi,
 etiam serionis usus argumentum est ¹ maus in laeva
 fuisset, qua scutum capitur est quidem apud
 eundem Homerum virorum crinibus aurum inplexum,
 ideo nescio an prior usus feminis coeperit
 14 V Romae ne fuit quidem aurum nisi admodum
 exiguum longo tempore certe cum a Gallis capta
 urbe pax emeretur, non plus quam mille pondo effici
 potuere nec ignoro MM pondo auri perisse Pompeii
 in consultu e Capitolini Iovis solio a Camillo ibi
 condita, et ideo a pleisque existimari MM pondo
 collata sed quod accessit, ex Gallorum praeda fuit
 detractumque ab eis in parte captae urbis delubris—
 15 Gallos cum auro pugnare solitos Torquatus indicio
 est—, apparet ergo Gallorum templorumque tan-
 tundem nec amplius fuisse quod quidem in

¹ est *cdd* (est et *B*) esset *Mayhoff*

^a *Il* XVII 52

^b Victor over the Gauls in 390 B C

^c T Manlius obtained this surname from the gold necklace, *torques*, which he took from a Gaul whom he slew in single combat in 360 B C

feminine finery like earrings—without mentioning finger-rings And whoever first introduced them did so with hesitation, and put them on the left hand, which is generally hidden by the clothes, whereas it would have been shown off on the right hand if it had been an assured distinction And if this might possibly have been thought to involve some interference with the use of the right hand, there is the proof of more modern custom, it would have also been more inconvenient to wear it on the left hand, which holds the shield Indeed it is also stated, by Homer ^a again, that men wore gold plaited in their hair and consequently I cannot say whether the use of gold originated from women

V At Rome for a long time gold was actually not to be found at all except in very small amounts *Roman wealth in gold* At all events when peace had to be purchased after the capture of the City by the Gauls, not more than 390 B C a thousand pounds' weight of gold could be produced I am aware of the fact that in Pompey's third consulship there was lost from the throne of Jupiter of the Capitol two thousand pounds' weight of gold that had been stored there by Camillus,^b which led to a general belief that 2000 pounds was the amount that had been accumulated But really the additional sum was part of the booty taken from the Gauls, and it had been stripped by them from the temples in the part of the city which they had captured—the case of Torquatus ^c shows that the Gauls were in the habit of wearing gold ornaments in battle, therefore it appears that the gold belonging to the Gauls and that belonging to the temples did not amount to more than that total, and this in fact was taken to be the meaning contained in the

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augurio intellectum est, cum Capitolinus duplum reddidisset

Illud quoque obiter indicari convenit—etiam¹ de anulis sermonem repetivimus—, aeditum custodiae eius comprehensum fracta in ore anuli gemma statim
 16 exspirasse et indicium ita extinctum ergo vel² maxime MM tantum pondo, cum capta est Roma, anno ccclxiiii fuere, cum iam capitum liberorum censa essent CLII DLXIII in eadem post annos ccvii, quod ex Capitoline aedis incendio ceterisque omnibus delubris C Marius filius Praeneste detulerat,³ LVIII⁴ pondo, quae sub eo titulo in triumpho transtulit Sulla et argenti VI⁵ idem ex reliqua omni victoria pridie transtulerat auri pondo LV, argenti p CLV

17 VI Frequentior autem usus anulorum non ante Cn Flavium Anni filiumprehenditur. hic namque publicatis diebus fastis, quos populus a paucis principum cotidie petebat, tantam gratiam plebei adeptus est—libertino patre alioqui genitus et ipse scriba Appi Caeci, cuius hortatu exceperat eos dies consultando assidue sagaci ingenio promulgaratque

¹ etiam *B* quoniam *rell* et iam *Ian* etenim *coni Mayhoff*

² vel *L C Purser* ut

³ detulerat, erant *coni Mayhoff*

⁴ LVIII *Ian* LXIII *B* LXIII *rell* (tredecim milia *cd Par* 6801)

⁵ VI *Ian* VI

^a The reference has not been explained

^b It contained a poison, cf § 26

^c By the Gauls in 390 B C

^d Appius Claudius, censor in 312 B C and builder of the Appian Way

augury,^a when Jupiter the God of the Capitol had repaid twofold

Also, as we began on this topic from the subject of rings, it is suitable incidentally to point out that the official in charge of the temple of Jupiter of the Capitol when he was arrested broke the stone ^b of his ring between his teeth and at once expired, so putting an end to any possibility of proving the theft. It follows that there was only 2,000 lbs weight of gold at the outside when Rome was captured in its 364th year,^c although the census showed there were already 152,573 free citizens. From the same city 307 years later the gold that Gaius Marius ^{82 B C} the younger had conveyed to Palestrina from the conflagration of the temple of the Capitol and from all the other shrines amounted to 14,000 lbs, which with a placard above it to that effect was carried along in his triumphal procession by Sulla, as well as ^{81 B C} 6,000 lbs weight of silver. Sulla had likewise on the previous day carried in procession 15,000 lbs of gold and 115,000 lbs of silver as the proceeds of all the rest of his victories.

VI It does not appear that rings were in more common use before the time of Gnaeus Flavius son of Annius. It was he who first published the dates for legal proceedings, which it had been customary ^{More about rings in the Republican period} for the general public to ascertain by daily enquiry ^{305-4 B C.} from a few of the leading citizens, and thus won him such great popularity with the common people—he was also the son of a liberated slave and himself a clerk to Appius Caecus,^d at whose request he had by dint of natural shrewdness through continual observation picked out those days and published them—that he was appointed a curule

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—, ut aedilis cuiuslibet crearetur cum Q Anicio Prae-
nestino, qui paucis ante annis hostis fuisset, prae-
teritis C Poetilio et Domitio, quorum patres consules
18 fuerant additum Flavio, ut simul et tribunus plebei
esset, quo facto tanta indignatio exarsit, ut anulos
abiectionis in antiquissimis reperiatur annalibus fallit
plerosque quod tum et equestrem ordinem id fecisse
arbitrantur, etenim adiectum hoc quoque sed et
phaleras positas propterque hoc nomen equitum adiec-
tum est, anulosque depositos a nobilitate in annales
relatum est, non a senatu universo hoc actum P
19 Sempionio L Sulpicio cos Flavius vovit aedem
Concordiae, si populo reconciliasset ordines, et, cum
ad id pecunia publice non decerneretur, ex multitudine
faeneratoribus condemnatis aediculam aeream fecit
in Graecostasi, quae tunc supra comitium erat,
inciditque in tabella aerea factam eam aedem
20 ccciiii annis post Capitolinam dedicatam id a²
ccccxxxviii a condita urbe gestum est et primum
anulorum vestigium extat, promiscui autem usus
alterum secundo Punico bello, neque enim aliter

¹ propterque hoc *Rackham alii alia* propterque

² id a (anno) *C F W Müller* ita

^a Probably in the war with the twelve tribes of Etruria, who were conquered by Fabius at Lake Vadimo, 310 B C

^b A platform Greek and, later, any foreign envoys could watch proceedings It was later placed in the Forum

ædile as a colleague of Quintus Amicius of Palestrina, who a few years previously had been an enemy at war with Rome,^a while Gaius Poetilius and Domitius, whose fathers had been consuls, were passed over. Flavius had the additional advantage of being tribune of the plebs at the same time. This caused such an outburst of blazing indignation that we find in the oldest annals 'rings were laid aside'. The common belief that the Order of Knighthood also did the same on this occasion is erroneous, inasmuch as the following words were also added 'but also harness-bosses were put aside as well', and it is because of this clause that the name of the Knights has been added, and the entry in the annals is that the rings were laid aside by the nobility, not by the entire Senate. This occurrence took place in the consulship of Publius Sempionius ^{305 B C} and Lucius Sulpicius. Flavius made a vow to erect a temple to Concord if he succeeded in effecting a reconciliation between the privileged orders and the people, and as money was not allotted for this purpose from public funds, he drew on the fine-money collected from persons convicted of practising usury to erect a small shrine made of bronze on the Graecostasis,^b which at that date stood above the Assembly-place, and put on it an inscription engraved on a bronze tablet that the shrine had been constructed 204 years after the consecration of the Capitoline temple. This event took place in the 449th year from the foundation of the city, and ^{305 B C} is the earliest evidence to be found of the use of rings. There is however a second piece of evidence for their being commonly worn at the time of the Second Punic War, as had this not been the case it

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- potuisset timodia anulorum illa Carthaginem ab Hannibale mitti inter Caerionem quoque et Diusum ex anulo in auctione venali intimicitiae coepere, unde origo socialis belli et exitia rerum ne tunc quidem omnes senatores habuere utpote cum memoria avorum multi praetura quoque functi in ferreo consenuerint—sicut Calpurnium et Manium, qui legatus C. Marius fuit Iugurthino bello, Fenestella tradit, et multi L. Fufidium illum, ad quem Scaevus de vita sua scripsit—, in Quintiorum vero familia avum ne feminas quidem habere mos fuerit, nullosque omnino maior pars gentium hominumque, etiam qui sub imperio nostro degunt, hodieque habeat non signat oriens aut Aegyptus etiam nunc litteris contenta solis
- 22 Multis hoc modis, ut cetera omnia, luxuria variavit gemmas addendo exquisiti fulgoris censuque opimo digitos onerando, sicut dicemus in gemmarum volumine, mox et effigies varias caelando, ut alibi ais, alibi materia esset in pretio alias dem gemmas violari nefas putavit ac, ne quis signandi causam in
- 23 anulis esse intellexeret, solidas induit quasdam

^a This was after the battle of Cannae in 216 B.C. Livy says $3\frac{1}{2}$ pecks, Florus says 2

^b The so called Social War, 91–88 B.C.

^c This statement is untrue

would not have been possible for the three ^a pecks of rings as recorded to have been sent by Hannibal to Carthage. Also it was from a ring put up for sale by auction that the quarrel between Caepio and Drusus began which was the primary cause of the war with the allies ^b and the disasters that sprang from it. Not even at that period did all members of the senate possess gold rings, seeing that in the memory of our grandfathers many men who had even held the office of prætor wore an iron ring to the end of their lives—for instance, as recorded by Fenestella, Calpurnius and Manilius, the latter having been lieutenant-general under Gaius Marius in the war 112-106 B with Jugurtha, and, according to many authorities, the Lucius Fufidius to whom Scaurus dedicated his Autobiography—while another piece of evidence is that in the family of the Quintii it was not even customary for the women to have a gold ring, and that the greater part of the races of mankind, and even of the people who live under our empire and at the present day, possess no gold rings at all. The East and Egypt do not ^c seal documents even now, but are content with a written signature.

This fashion like everything else luxury has diversified in numerous ways, by adding to rings gems of exquisite brilliance, and by loading the fingers with a wealthy revenue (as we shall mention in our book on gems) and then by engraving on them a variety of devices, so that in one case the craftsmanship and in another the material constitutes the value. Then again with other gems luxury has deemed it sacrilege for them to undergo violation, and has caused them to be worn whole, to prevent anybody's imagining that people's finger-rings were intended for

*Methods of
wearing
rings*

XXXVII
2 sqq

PLINY NATURAL HISTORY

vero neque ab ea parte, quæ digito occultantur
auro clusit aurumque millis² lapilloium vilius fec
contra vero multi nullas admittunt gemmas auroque
ipso signant id Claudii Caesaris principatu repe
tum nec non et servitia iam ferrum auro cingunt
alia per sese meo auro decorant—, cuius licenti
origo nomine ipso in Samothrace id institutu
declarat

- 24 Singulis primo digitis genus mos fuerat, qui su
minimis proximi sic in Numae et Servi Tullii statu
videmus postea pollicis proximo induere, etiam in
deorum simulacris, dein iuvit et minimo daci
Galliae Britanniaeque medio dicuntur usae h
nunc solus excipitur, ceteri omnes onerantur, atque
25 etiam privatim articuli minoribus aliis sunt qui
uni tantum minimo congerant, alii vero et hu
tantum unum, quo signantem signent condit
ille, ut res iara et iniuria usus indigna, velut
saciano promitur, ut et unum in minimo digi
habuisse pretiosioris in recondito supellectilis oste
tatio sit iam alii pondera eorum ostentant al
plures quam unum gestare labor est, alii bratte

¹ V l quae digito occultatur

² millis *Ian* micis *Gronov* vilibus *conr* *Urlichs* mill
B¹ milibus

³ in *add* *Mayhoff*

^a Or possibly 'that finger rings contained a motive for
sealing documents,' i.e., that people were ready to seal dees
in order to show off the engraved stones

^b Slaves wore iron rings, a symbol of captivity

^c I.e. they were called Samothracian rings

sealing documents!^a Some gems indeed luxury has left showing in the gold even on the side of the ring that is hidden by the finger, and has cheapened the gold with collars of little pebbles. But on the contrary many people do not allow any gems in a signet-ring, and seal with the gold itself, this was a fashion invented when Claudius Cæsar was emperor. Moreover even slaves nowadays encircle the non of their rings^b with gold (other articles all over them they decorate with pure gold), an extravagance the origin of which is shown by its actual name^c to have been instituted in Samothrace.

It had originally been the custom to wear rings on one finger only, the one next the little finger, that is how we see them on the statues of Numa and Servius Tullius. Afterwards people put them on the finger next the thumb, even in the case of statues of the gods, and next it pleased them to give the little finger also a ring. The Gallic Provinces and the British Islands are said to have used the middle finger. At the present day this is the only finger exempted, while all the others bear the burden, and even each finger-joint has another smaller ring of its own. Some people put all their rings on their little finger only, while others wear only one ring even on that finger, and use it to seal up their signet ring, which is kept stored away as a rarity not deserving the insult of common use, and is brought out from its cabinet as from a sanctuary, thus even wearing a single ring on the little finger may advertise the possession of a costlier piece of apparatus put away in store. Some again show off the weight of their rings, others count it hard work to wear more than one, and others consider that filling the gold tinsel

PLINY NATURAL HISTORY

inferre leviore materia propter casum tutius gem-
maum sollicitudini putant, alii sub gemmis venena
cludunt, sicut Demosthenes summus Graeciae orator,
26 anulosque mortis gratia habent denique vel ¹ plu-
rima opum scelera anulis fiunt quae fuit illa vita
priscorum, qualis innocentia, in qua nihil signabatur
nunc cibi quoque ac potus anulo vindicantur a rapina
hoc profecere mancipiorum legiones, in domo turba
externa ac iam servorum quoque causa nomenclator
adhibendus aliter apud antiquos singuli Marcipores
Luciporesve dominorum gentiles omnem victum in
promiscuo habebant, nec ulla domi a domesticis
27 custodia opus erat nunc rapiendae comparantur
epulae pariterque qui rapiant eas, et claves quoque
ipsas signasse non est satis gravatis somno aut
morientibus anuli detrahuntur, maiorque vitae ratio
circa hoc instrumentum esse coepit, incertum a quo
tempore videmur tamen posse in externis auctori-
tatem eius rei intellegere circa Polycraten Sami
tyrannum, cui dilectus ille anulus in mare abiectus
capto relatus est pisce, ipso circiter CCXXX urbis

¹ vel *Bergk* ut

^a Plutarch, *Vit Demosth* 29 reports a statement that Demosthenes always carried a poison in a bracelet on his arm, and that he killed himself with it to avoid falling into the hands of Antipater of Macedon, 322 B C

^b *I e* documents are forged and sealed with faked signet rings

^c He was put to death c 515 B C by the Persian Oroetes

of the circle with a lighter material, in case of their dropping, is a safer precaution for their anxiety about their gems, others enclose poisons underneath the stones in their rings, as did Demosthenes,^a the greatest orator of Greece, and they wear their rings as a means of taking their own lives. Finally, a very great number of the crimes connected with money are carried out by means of rings.^b To think what life was in the days of old, and what innocence existed when nothing was sealed! Whereas nowadays even articles of food and drink have to be protected against theft by means of a ring—this is the progress achieved by our legions of slaves—a foreign rabble in one's home, so that an attendant to tell people's names now has to be employed even in the case of one's slaves! This was not the way with by-gone generations, when a single servant for each master, a member of his master's clan, Marcius's boy or Lucius's boy, took all his meals with the family in common, nor was there any need of precautions in the home to keep watch on the domestics. Nowadays we acquire sumptuous viands only to be pilfered and at the same time acquire people to pilfer them, and it is not enough to keep our keys themselves under seal while we are fast asleep or on our death-beds, our rings are slipped off our fingers, and the prevailing system of our lives has begun to centre round that portable chattel, though when this began is doubtful. Still it seems we can realize the importance this article possesses abroad in the case of the tyrant of Samos, Polycrates, who flung his favourite ring into the sea and had it brought back to him inside a fish which had been caught. Polycrates himself was put to death.^c

PLINY NATURAL HISTORY

28 nostrae annum interfecto celebratior quidem usus cum faenore coepisse debet argumento est consuetudo volgi, ad sponsiones etiamnum¹ anulo exiliente, tracta ab eo tempore, quo nondum erat aera velocior, ut plane adfirmare possimus nummos ante apud nos, mox anulos coepisse de nummis paulo post dicitur

29 VII Anuli distinxere alterum ordinem a plebe, ut semel coeperant esse celebres, sicut tunica ab anulis senatum quamquam et hoc sero, vulgoque purpura latiore tunicae usos invenimus etiam praeficones, sicut patrem L Aeli Stilonis Praeficoni ob id cognominati sed anuli plane tertium ordinem mediumque plebei et patribus inseruere, ac quod antea militares equi nomen dederant, hoc nunc pecuniae indices tribuunt nec pridem id factum

30 divo Augusto decurias ordinante maior pars iudicum in ferreo anulo fuit neque non equites, sed iudices vocabantur equitum nomen subsistebat in turmis equorum publicorum iudicum quoque non nisi quattuor decuriae fuere primo, vique singula milia in decuris inventa sunt, nondum provincius ad hoc

¹ etiam nunc *con* Mayhoff

^a 'Son of the herald'

^b *Eques*

about the 230th year of the city of Rome Still the employment of a signet-ring must have begun to be much more frequent with the introduction of usury This is proved by the custom of the lower classes, among whom even at the present day a ring is whipped out when a contract is being made, the habit comes down from the time when there was as yet no speedier method of guaranteeing a bargain, so we can safely assert that with us money began first and signet-rings came in afterwards About money we shall speak rather later

VII As soon as rings began to be commonly worn, they distinguished the second order from the commons, just as a tunic distinguished the senate from those who wore the ring, although this distinction also was only introduced at a late date, and we find that a wider purple stripe on the tunic was commonly worn even by heralds, for instance the father of Lucius Aelius Stilo Praeconinus, who received his surname ^a from his father's office But wearing rings clearly introduced a third order, intermediate between the commons and the senate, and the title ^b that had previously been conferred by the possession of a war-horse is now assigned by money rates This however is only a recent introduction when his late lamented Majesty Augustus made regulations for the judicial panels the majority of the judges belonged to the iron ring class, and these used to be designated not Knights but Justices, the title of Knights remained with the cavalry squadrons mounted at the public charge Of the Justices also there were at the first only four panels, and in each panel scarcely a thousand names were to be found, as the provinces had not yet been

PLINY NATURAL HISTORY

- munus admissis, servatumque in hodiernum est, ne
 31 quis e novis civibus in ius iudicaret decuriae quoque ipsae pluribus discretas nominibus fuere, tribunorum aeris et selectorum et iudicum praeter hos etiamnum nongenti vocabantur ex omnibus electi ad custodiendas suffragiorum cistas in comitis et divisus hic quoque ordo erat superba usurpatione nominum, cum alius se nongentum, alius selectum, alius tribunum appellaret
- 32 VIII Tiberii demum principatu¹ nono anno in unitatem venit equester ordo, anulorumque auctoritati forma constituta est C Asinio Pollione C Antistio Vetere cos anno urbis conditae DCCLXXV, quod miremur, futuri paene de causa, cum C Sulpicius Galba, iuvenalem famam apud principem popinarum poemis aucupatus, questus esset in senatu, volgo institores eius culpa defendi anulis hac de causa constitutum, ne cui ius esset nisi qui ingenuus ipse, <ingenuo>² patre, avo paterno HS CCCC census fuisset et lege Iulia theatri in quattuordecim ordinibus
- 33 sedisset postea gregatim insigne id adpeti coeptum

¹ principatu *B* principatus *rell*

² ingenuus ipse ingenuo *Dellefsen* qui ingenuus ipse aut cui ingenuo ipsi

^a Originally it seems officials (tribuni aerarii) who collected the property tax from Roman citizens (until 167 B C), and paid the soldiers out of a special fund. But in the first century B C they appear as an *ordo* in the state next below the *equites*

^b Tiberius

^c *I.e.* the gold ring of the Order of Knighthood whose members often practised banking, tax farming and other businesses

^d The financial standing of an *eques*

admitted to this duty, and the regulation has survived to the present day that nobody newly admitted to citizenship shall serve as a justice on one of the panels. The panels themselves also were distinguished by various designations, as consisting of Tribunes of the Money,^a Selected Members and Justices. Moreover beside these there were those styled the Nine Hundred, selected from the whole body as keepers of the ballot-boxes at elections. And the proud adoption of titles had made divisions in this order also, one person styling himself a member of the Nine Hundred, another one of the Select, another a Tribune.

VIII Finally in the ninth year in office of the Emperor Tiberius the Order of Knights was united into a single body, and in the Consulship of Gaius Asinius Pollio and Gaius Antistius Vetus, in the 775th year since the foundation of Rome, a regulation was established authorizing who should wear rings, the motive for this, a thing that may surprise us, was virtually the futile reason that Gaius Sulpicius Galba had made a youthful effort to curry favour with the emperor ^b by enacting penalties for keeping eating-houses and had made a complaint in the senate that peddling tradesmen when charged with that offence commonly protected themselves by means of their rings ^c. Consequently a rule was made that nobody should have this right except one who was himself a free-born man whose father and father's father had been free-born also, and who had been rated as the owner of 400,000 sesterces ^d and had been entitled under the Julian law as to the theatre to sit in the fourteen front rows of seats. Subsequently people began to apply in crowds for this

PLINY NATURAL HISTORY

propter haec discrimina C princeps decuriam quintam adiecit, tantumque enatum est fastus, ut, quae sub divo Augusto impleri non potuerant, decuriae non capiant eum ordinem, passimque ad ornamenta ea etiam servitute liberati transiliant, quod antea numquam erat factum, quoniam ¹ ferreo anulo et equites iudicesque intellegebantur adeoque id promiscuum esse coepit, ut apud Claudium Caesarem in censura eius unus ex equitibus Flavius Proculus cccc ex ea causa reos postularet ita dum separatus ordo ab
34 ingenuis, communicatus est cum servitis iudicum autem appellatione separare eum ordinem primi omnium instituere Gracchi discordi popularitate in contumeliam senatus, mox debellata auctoritas nominis vario seditio-
num eventu circa publicanos substitit et aliquamdiu tertiae sortis viri publicani fuere M Cicero demum stabilivit equestre nomen in consulatu suo Catilinianis rebus, ex eo ordine profectum se celebrans eiusque vires peculiari popularitate quaerens ab illo tempore plane hoc tertium corpus in re p factum est, coepitque adici senatui

¹ quoniam *Mayhoff* qm in

^a In fact C Gracchus, tribune 123-2 B C

mark of rank, and in consequence of the disputes thus occasioned the Emperor Gaius Caligula added A D 37-41 a fifth panel, and so much conceit has this occasioned that the panels which under his late lamented Majesty Augustus it had not been possible to fill will not hold that order, and there are frequent cases of men who are actually liberated slaves making a leap over to these distinctions, a thing that previously never occurred, since the iron ring was the distinguishing mark even of knights and judges. And the thing began to be so common that during the censorship of the Emperor Claudius a member A D 48 of the Order of Knighthood named Flavius Proculus laid before him information against 400 persons on this ground, so that an order intended to distinguish the holder from other men of free birth has been shared with slaves. It was the Gracchi^a who first instituted the name of Justices or Judges as the distinguishing name of that order of knights—seditiously currying favour with the people in order to humiliate the senate, but subsequently the importance of the title of Knight was swamped by the shifting currents of faction, and came down to be attached to the farmers of public revenues, and for some time these revenue officers constituted the third rank in the state. Finally Marcus Cicero, thanks to the Catilinarian affair, during his consulship 63 B C put the title of knighthood on a firm footing, boasting that he himself sprang from that order, and winning its powerful support by methods of securing popularity that were entirely his own. From that time onward the Knighthood definitely became a third element in the state, and the name of the Equestrian Order came to be added to the formula 'The

PLINY NATURAL HISTORY

populoque Romano et equestei ordo qua de causa
et nunc post populum scribitur, quia novissime
coeptus est adici

- 35 IX Equitum quidem etiam nomen ipsum saepe
variatur est, in us quoque, qui id ab equitatu tra-
hebant celeres sub Romulo legibusque sunt appel-
lati, deinde flexuntes, postea trossuli, cum oppidum
in Tuscis citra Volsinos p. VIII sine ullo peditum
adiumento cepissent eius vocabuli, idque duravit
36 ultia C. Gracchum Iunius certe, qui ab amicitia
eius Gracchanus appellatus est, scriptum reliquit his
verbis Quod ad equestrem ordinem attinet, antea
trossulos vocabant, nunc equites vocant ideo, quia
non intellegunt trossulos nomen quid valeat, mul-
tosque pudet eo nomine appellari et causam, quae
supra indicata est, exponit invitosque etiamnum¹
tamen trossulos vocari

- 37 X Sunt adhuc aliquae non omittendae in auro
differentiae auxilia quippe et externos torquibus
aureis donare, at cives non nisi argenteis, praeter-
que armillas civibus dedere, quas non dabant externis
38 XI Idem, quo magis mitemur, coronas ex auro
dedere et civibus quis primus donatus sit ea, non

¹ etiamtum *con* Mayhoff

^a But in fact the regular order of words was senate, equites, Roman people

^b Trossum or Trossulum, there are still remains of a town at Trosso, two miles from Monte Fiascone in Tuscany

Senate and People of Rome' This is the reason why it is even now written after ^a 'People,' because it was the latest addition introduced

IX Indeed the very name of the Knights has itself frequently been altered, even in the case of those who derived the title from the fact of their serving as cavalry Under Romulus and the Kings they were called the Celeres, then the Flexuntres and afterwards the Trossuli, because of then having without any assistance from infantry captured a town of that name ^b in Tuscany nine miles this side of Volsini, and the name survived till after the time of Gaius Gracchus At all events in the writings left by Junius, who owing to his friendship with Gaius Gracchus was called Gracchanus, these words occur 'So far as concerns the Equestrian Order they were previously called the Trossuli, but are now simply designated the Cavalry, because people do not know what the word Trossuli means and many of them are ashamed of being called by that name' He goes on to explain the reason above indicated, and says that they were even in his time still called Trossuli, though they did not wish to be

X There are some additional particulars in *Necl laces* regard to gold which must not be omitted For instance our authorities actually bestowed gold necklaces on foreign soldiers, but only awarded silver ones to Roman citizens, and what is more they gave bracelets to citizens, which it was not their custom to give to foreigners

XI But at the same time, as is even more *Crowns of gold* surprising, they gave crowns of gold even to citizens Who was the first person to receive one I have not

PLINY NATURAL HISTORY

inveni equidem, quis primus donavit, a L Pisone
 traditum. A Postumius dictator apud lacum Regillum
 castis Latinorum expugnatis eum, cuius maxime
 opera capta essent hanc coronam ex praeda is
 dedit II 1,¹ item L Lentulus consul Servio Cornelio
 Merendae Samnitum oppido capto, sed hic quinque
 librarum, trium² Piso Fugi filium ex privata pecunia
 donavit eamque coronam testamento ei praelegavit

- 39 XII Deorum honore causa in sacris nihil aliud
 excogitatum est quam ut auratis comibus hostiae,
 maiores dumtaxat, immolarentur sed in militia
 quoque in tantum adolevit haec luxuria, ut M
 Bruti e Philippicis campis epistolae repellantur
 frementis fibulas tribunicias ex auro geri ita,
 Hercules? idem enim tu, Brute, mulierum pedibus
 aurum gestatum³ tacuisti et nos sceleris arguimus
 illum, qui primus auro dignitatem per anulos fecit!
 habeant in laceis iam quidem et VII, quod ex
 Dardanis venit—itaque et Dardanum vocabatur,
 40 violae Celtice dicuntur, viae Celtiberice—, habe-
 ant feminae in armillis digitisque totis, collo, auribus,
 spuis, discurrant catenae circa latera et in secreto

¹ dedit II 1 (i.e. librarum) *Mayhoff* dedit *cdd* (dedit
 I B¹)

² trium *add Hardown coll Val Max* IV 3 10

³ gestatum *B, cd Colb* gestari *rell*

myself been able to ascertain, but Lucius Piso records who was the first person to bestow one, namely the dictator Aulus Postumius, who when the camp of the Latins at Lake Regillus had been 497 B C taken by storm awarded a gold crown to the soldier who had been chiefly responsible for taking the place. In this case the crown which he bestowed was made of gold taken from the booty captured, and weighed two pounds. Also Lucius Lentulus as consul awarded a gold crown to Servius Cornelius 275 B C Merenda after the taking of a town belonging to the Samnites, but Servius's crown weighed five pounds, while Piso Frugi bestowed on his son one weighing three pounds out of his personal resources, leaving it to him by will as a specific legacy.

XII As a mark of honour to the gods at sacrifices no other means has been devised but to gild the horns of the victims to be immolated, at all events of full-grown animals. But in military service also this form of luxury has grown to such dimensions that we find a letter of Marcus Brutus sent from the Plains of Philippi expressing his indignation at 42 B C the brooches made of gold that were worn by the tribunes. Really I must protest! Why, even you, Brutus, did not mention the gold worn on their feet by women, and we accuse of crime the man who first conferred dignity on gold by using gold rings! Let even men nowadays wear gold bracelets—called 'Dardania' because the fashion came from the Dardani—the Celtic name for them is 'viriolae' and the Celtiberian 'viriae', let women have gold in their bracelets and covering their fingers and on their neck, ears and tresses, let gold chains run at random round their waists, and let little bags of

*Further
remarks
about gold*

PLINY NATURAL HISTORY

- maignitarum sacculi e collo dominarum auro pend-
deant, ut in somno quoque unionum conscientia
adsit etiamne pedibus induetur atque inter stolam
plebemque hunc medium feminarum equestrem
ordinem faciet? honestius viii paedagogis id damus,
41 balneasque dives pueroium forma convertit¹ iam
vero et Haipocraten statuasque Aegyptiorum numi-
num in digitis viri quoque portare incipiunt fuit et
alia Claudii principatu differentia insolens us, quibus
admissiones² liberae³ ius⁴ dedissent⁵ imaginem
principis ex auro in anulo gerendi, magna cuminum
occasione, quae omnia salutaris exortus Vespasiani
imperatoris abolevit aequaliter publicando principem
de anulis aureis usuque eorum hactenus sit dictum
42 XIII Proximum scelus fuit eius, qui primus ex
auro denarium signavit, quod et ipsum latet auctore
incerto populus Romanus ne argento quidem sig-
nato ante Pyrrhum regem devictum usus est
libralis—unde etiam nunc libella dicitur et dupondius
—adpendebatur assis, quare aeris gravis poena
dicta, et adhuc expensa in rationibus dicuntur, item

¹ convertit *J Muller*

² admissiones *Mommsen* admissionem *cdd pler* admis-
sion//1//s *B²*

³ liberae *B* liberti *rell*

⁴ ius *Lips* eius

⁵ dedisset *con* *Ian*

^a *I e* gold ornaments on the sandal straps

^b Said to have been the Egyptian god of silence

^c *I e* committed against the welfare of mankind The
worst crime was the introduction of gold rings, § 8

^d Equal in value to 25 silver denarii

^e The *as* was reduced in weight in the 1st Punic War or
soon after

^f A piece worth two *asses*

pearls hang invisible suspended by gold chains from their lady owners' neck, so that even in their sleep they may retain the consciousness of possessing gems but are even then feet to be shod with gold,^a and shall gold create this female Order of Knighthood, intermediate between the matron's robe and the common people? Much more becomingly do we men bestow this on our page-boys, and the wealthy show these lads make has quite transformed the public baths! But nowadays even men are beginning to wear on their fingers a representation of Harpocrates^b and figures of Egyptian deities. In the time of the Emperor Claudius there was also A D 41-54 another unusual distinction, belonging to those whose rights of free access to the presence had given them the privilege of wearing a gold likeness of the emperor on a ring, this affording a great opportunity for informations, but all of this was however entirely abolished by the opportune rise to power of the Emperor Vespasian, by making the A D 69-79 emperor equally accessible to all. Let this suffice for a discussion of the subject of gold rings and their employment.

XIII Next in degree was the crime committed ^c *Roman* by the person who first coined a gold denarius,^d ^e *coinage* a crime which itself also is hidden and its author un- ^f *in three* known. The Roman nation did not even use a ^g *metals* stamped silver coinage before the conquest of King 275 B C Pyrrhus. The *as* weighed one pound—hence the term still in use, 'little pound'^e and 'two pounder'^f, this is the reason why a fine is specified in 'heavy bronze,'^g and why in book-keeping outlay is still designated as 'sums weighed out,' and likewise

^a On *aes*, see XXXIV 1, note

PLINY NATURAL HISTORY

- 43 inpendia et dependere, quin et militum stipendia, hoc est stipis pondera, dispensatores, libripendes, quae consuetudine in us emptionibus, quae mancipi sunt, etiam nunc libra interponitur Servius rex primus signavit aes antea rudi usos Romae Timaeus tradit signatum est nota pecudum, unde et pecunia appellata maximus census $\overline{\text{cxxx}}$ assium fuit illo rege, et ideo haec prima classis
- 44 Argentum signatum anno urbis cccclxxxv ,¹ Q Ogulnio C Fabio cos, quinque annis ante primum Punicum bellum et placuit denarium pro x libris aeris valere, quinarium pro v, sestertium pro dupondio ac semisse libræ autem pondus aeris imminutum est bello Punico primo, cum impensis res p non sufficeret, constitutumque ut asses sextantario pondere ferrentur ita quinque partes lucii factae, dissolu-
- 45 tumque aes alienum nota aeris eius fuit ex altera parte Ianus geminus, ex altera rostrum navis, in triente vero et quadrante rates quadrans antea teruncius vocatus a tribus uncis postea Hannibale

¹ cccclxxxv *Cellarius* cccclxxxxv *B* dlxxxv *rell*

interest as 'weighed on account' and paying as 'weighing down,' and moreover it explains the terms 'soldiers' stipend,' which means 'weights of heaped money,' and the words for accountants and paymasters that mean 'weighers' and 'pound-weighers,' and owing to this custom in purchases that deal with all larger personal property, even at the present day, an actual pair of 'pound'-scales is introduced King Servius was the first to stamp a *Traditional dates 578-534 B C* design on bronze, previously, according to Timaeus, at Rome they used raw metal The design stamped on the metal was an ox or a sheep, *pecus*, which is the origin of the term '*pecunia*' The highest assessment of one man's property in the reign of Servius was 120,000 *as-pieces*, and consequently that amount of property was the standard of the first class of citizens

Silver was first coined in the 485th year of the city, 269-8 B C in the consulship of Quintus Ogulnius and Gaius Fabius, five years before the first Punic War It was decided that the value of a denarius should be ten pounds of bronze, that of a half-denarius five pounds, that of a sesterce two pounds and a half The weight of a standard pound^a of bronze was however reduced during the first Punic War, when the state could not meet its expenditure, and it was enacted that the *as* should be struck weighing two ounces This effected a saving of five sixths, and the national debt was liquidated The design of this bronze coin was on one side a Janus facing both ways and on the other the ram of a battleship, the third of an *as* and the quarter *as* had a ship The latter had previously been called a *teruncius*, as weighing three ounces Subsequently when the presence of Hannibal was being felt, in the dictator- 217 B C

PLINY NATURAL HISTORY

urgente ¹ Q Fabio Maximo dictatore asses unciales facti, placuitque denarium xvi assibus permutari, quinarium octonis, sestertium quateinis ita res p dimidium lucrata est, in militari tamen stipendio
 46 semper denarius pro x assibus datus est notae argenti fuere bigae atque quadrigae, inde bigati quadrigatique dicti

Mox lege Papiria semunciarum asses facti Livius Drusus in tribunatu plebei octavam partem aeris argento miscuit is, qui nunc victoriatus appellatur, lege Clodia percussus est, antea enim hic nummus ex Illyrico advectus mercis loco habebatur est autem signatus Victoria, et inde nomen

47 Aureus nummus post annos LI ² percussus est quam argenteus ita, ut scipulum valeret sestertios vicens, ³ quod effectum ⁴ in librali ⁵ ratione sesterti, ⁶ qui tunc erat, cccc ⁷ postea placuit X xxx signari ex auri libris, paulatimque principes imminuere pondus, et novississime Nero ad xlvv

48 XIV Sed a nummo prima origo avaritiae faenore excogitato quaestuosaque segnitia, nec paulatim exarsit rabie quadam non iam avaritia, sed fames auri,

¹ urgente B, *cd Par 6801* urgente Marcum *rell* urgente Marcum Minucium *Brotier*

² LI B LXII *rell*

³ sestertios vicens *Brotier* sestertius vicens *aut* sestertius vicens (sestertio B vicens B¹ vincens B²)

⁴ effectum K C *Barley* efficit B, *cd Par 6801* effectit *rell*

⁵ librali B libras *rell* libram *Mayhoff*

⁶ sestertium *Urlichs* sestertiorum *Caesarinus*

⁷ erat *cd Par 6801* erant *rell* cccc B p nongenti *rell* (sestertios DCCC *cd Par 6801*) *varia editores*

ship of Quintus Fabius Maximus, *asses* of one ounce weight were coined, and it was enacted that the exchange-value of the *denarius* should be sixteen *asses*, of the half-denarius eight and of the quarter-denarius four, by this measure the state made a clear gain of one half. But nevertheless in the pay of soldiers one denarius has always been given for ten asses. The designs on silver were a two-horse and a four-horse chariot, and consequently the coins were called a *pair of horses* and a *four-in-hand*.

Next according to a law of Papirius *asses* ^{89 B C} weighing half an ounce were struck. Livius Drusus ^a when holding the office of tribune of the plebs alloyed the silver with one-eighth part of bronze. The coin now named the victory coin was struck under the law of Clodius, previously a coin ^c ^{104 B C} of this name was imported from Illyria and was looked on as an article of trade. The design on it was a figure of Victory, which gives it its name.

The first gold coin was struck 51 years later than ^{217 B C} the silver coinage, a scruple of gold having the value of twenty sesterces, this was done at 400 to the pound of silver, at the then rating of the sesterce. It was afterwards decided to coin denarii at the rate ^{49 B C} of 40 from a pound of gold, and the emperors gradually reduced the weight of the gold denarius, and most recently Nero brought it down to 45 denarii to ^{A D 54-68} the pound.

XIV But from the invention of money came the original source of avarice when usury was devised, and a profitable life of idleness, by rapid stages what was no longer mere avarice but a positive *Examples of misuse of gold*

^a Probably the tribune of 123 B C, not his son who was tribune in 91 B C

PLINY NATURAL HISTORY

- utpote cum Septumuleius, C Gracchi familiaris, auro
 rependendum caput eius abscisum ad Opimum
 tulerit plumboque in os addito paricido suo rem p
 etiam circumscripserit, nec iam Quirium aliquis,
 sed universo nomine Romano infami rex Mithridates
 Aquilio duci capto aurum in os infudit haec parit
 49 habendi cupido¹ pudet intuentem nomina ista, quae
 subinde nova Graeco sermone excogitantur insperso
 argenteis vasis auro et incluso, quibus delicias pluris
 veneunt inaurata quam aurea, cum sciamus inter-
 dixisse castris suis Spartacum, ne quis aurum haberet
 aut argentum tanto plus fuit animi fugitivis nos-
 50 tris¹ Messalla orator prodidit Antonium triumvirum
 aureis usum vasis in omnibus obscenis desideis,
 pudendo crimine etiam Cleopatrae summa apud
 exteros licentiae fuerat Philippum regem poculo
 aureo pulvinis subdito dormire solitum, Hagnonem
 Teum, Alexandri Magni praefectum, aureis clavis
 suffigere crepidas Antonius solus contumelia natu-
 rae vilitatem auro fecit o dignum proscriptione,
 sed Spartaci¹
 51 XV Equidem miror populum Romanum victis
 gentibus in tributo semper argentum imperasse, non

^a Consul in 121 B C

^b After the battle of Protomachium in Asia Minor, 88 B C

^c Leader of a great slave rising in Italy, 73-71 B C

^d I e by a slave, not by a fellow freeman Antony was infamous for the proscription which he inflicted in 43 B C

hunger for gold flared up with a sort of frenzy, inasmuch as the friend of Gaius Gracchus, *Sep-
tumelius*, a price having been set on Gracchus's 121 n o
head to the amount of its weight in gold, when
Gracchus's head had been cut off, brought it to
Opimius,^a after adding to his unnatural murder by
putting lead in the mouth of the corpse, and so
cheated the state in addition. Nor was it now some
Roman citizen, but King Mithridates who dis-
graced the whole name of Roman when he poured
molten gold into the mouth of the General Aquilius
whom he had taken prisoner.^b These are the
things that the lust for possessions engenders! One
is ashamed to see the new-fangled names that are
invented every now and then from the Greek to
denote silver vessels filigreed or inlaid with gold,
niceties which make gilded plate fetch a higher
price than gold plate, when we know that Spartacus^c
issued an order to his camp forbidding anybody to
possess gold or silver. so much more spirit was there
then in our run-away slaves! The orator Messala
has told us that the triumvir Antony used vessels of c 83-30 B
gold in satisfying all the indecent necessities, an
enormity that even Cleopatra would have been 69 8-30 B
ashamed of. Till then the record in extravagance
had lain with foreigners—King Philip sleeping with
a gold goblet under his pillows and Alexander the Ruled 359-
336 B C
Great's prefect Hagnon of Teos having his sandals Ruled 336-
323 B C
soled with gold nails, but Antony alone cheapened
gold by this contumely of nature. How he deserved
to be proscribed! but proscribed by Spartacus!^d

XV It does indeed surprise me that the Roman Examples of
luxury and
wealth in
precious
metals
nation always imposed a tribute of silver, not of gold,
on races that it conquered, for instance on Carthage

PLINY NATURAL HISTORY

aurum, sicut Carthaginī cum Hannibale victae octingenta milia, \overline{xvi} ¹ pondo annua in quinquaginta annos, nihil auri nec potēst videri paenuria mundi id evenisse iam Midas et Cioesus infinitum possederant, iam Cyius devicta Asia pondo \overline{xviii} invenerat praeter vasa aurumque factum et in eo solium,² platanum, vitem qua victoria argenti \overline{d} ³ talentorum reportavit et ciaterem Semnamidis, 52 cuius pondus xv talentorum colligebat talentum Aegyptium pondo Lxxx patere M⁴ Varro tradit iam regnaveiat in Colchis Saulaces Aeetae suboles, qui terram virginem nactus plurimum auri argentique eruisse dicitur in Suanorum gente, et alioqui velleribus aureis incluto regno et illius aureae camaeae, argenteae trabes et columnae atque parastaticae narrantur victo⁵ Sesostri, Aegypti rege tam superbo, ut prodatur annis quibusque sorte reges singulos e subiectis iungere ad currum solitus atque ita triumphare

53 XVI Et nos fecimus quae posteri fabulosa arbitrentur Caesar, qui postea dictator fuit, primus in aedilitate munere patris funebri omni apparatu

¹ \overline{xvi} Ian AVT cdd (om B argenti cd Par 6801)

² solū (i e solium) Mayhoff solia ac Pintianus foliatam Ian folia B folia ac rell

³ \overline{d} con Warnington

⁴ patere M Dellefsen capere Gelen pendere aut habere con Mayhoff patere cdd (paterem cd Leid 1 oss)

⁵ victae cd Par 6801

^a Probably the right reading is \overline{d} = 500

^b The legend was that Phrixus flew there on a ram with a fleece of gold to escape from his stepmother, and married the

when conquered together with Hannibal, 800,000 ^{202 B C} pounds weight of silver in yearly instalments of 16,000 pounds spread over 50 years, but no gold. Nor can it be considered that this was due to the world's poverty. Midas and Croesus had already possessed wealth without limit, and Cyrus had already on conquering Asia Minor found booty consisting of 24,000 ^{546-5 B C} pounds weight of gold, besides vessels and articles made of gold, including a throne, a plane-tree and a vine. And by this victory he carried off 500,000 ^a talents of silver and the wine-bowl of Semnamis the weight of which came to 15 talents. The Aegyptian talent according to Marcus Varro amounts to 80 pounds of gold. Saulaces the descendant of Aeetes had already reigned in Colchis, who is said to have come on a tract of virgin soil in the country of the Suani and elsewhere and to have dug up from it a great quantity of gold and silver, his realm being moreover famous for golden fleeces ^b. We are also told of his gold-vaulted ceilings and silver beams and columns and pilasters, belonging to Sesostris King of Egypt whom Saulaces conquered, so proud a monarch that he is reported to have been in the habit every year of harnessing to his chariot individual kings selected by lot from among his vassals and so going in triumphal procession.

XVI We too have done things to be deemed mythical by those who come after us. Caesar, the future dictator, was the first person in the office of aedile to use nothing but silver for the appointments ^{65 B C} of the arena—it was at the funeral games presented in honour of his father, and this was the first daughter of King Aeetes. The fleece was later carried away by Jason and the Argonauts.

PLINY NATURAL HISTORY

- harenae argenteo usus est, ferasque etiam argenteis
 vasis incessivere tum primum noxi, quod iam etiam ¹
 in municipis aemulantur C Antonius ludos scaena
 argentea fecit, item L Murena, Gaius princeps in
 circo pegma duxit, in quo fuere argenti pondo
 54 $\overline{\text{CXXIII}}$ ² Claudius successor eius, cum de Britannia
 triumpharet, inter coronas aureas $\overline{\text{VII}}$ ³ pondo habere
 quam contulisset Hispania citerior, $\overline{\text{VIII}}$ ⁴ quam Gallia
 comata, titulis indicavit huius deinde succesori
 Nero Pompei theatrum operuit auro in unum diem,
 quo Tiridati Armeniae regi ostenderet et quota pars
 ea fuit aureae domus ambientis urbem ¹
 55 XVII Auri in aerario populi R fuere Sex Iulio
 L Aurelio cos, septem annis ante bellum Punicum
 tertium, pondo $\overline{\text{XVII}}$ ⁵ ccccx, argenti $\overline{\text{XXII}}$ lxx, et in
 numerato $\overline{\text{LXI}}$ $\overline{\text{XXXV}}$ cccc, Sexto Iulio L Marcio cos,
 hoc est belli socialis initio, auri ⁶ $\overline{\text{XVI}}$ $\overline{\text{XX}}$ dccccxxi
 56 C Caesar primo introitu urbis civili bello suo ex
 aerario protulit laterum aureorum $\overline{\text{XV}}$, argenteorum
 $\overline{\text{XX}}$, et in numerato ⁷ $\overline{\text{CCC}}$ nec fuit alius temporibus

¹ iam etiam B etiam rell iam et con Mayhoff

² $\overline{\text{CXXIII}}$ B $\overline{\text{CXXIII}}$ aut $\overline{\text{CXXXIII}}$ rell

³ $\overline{\text{VII}}$ B VII rell

⁴ $\overline{\text{VIII}}$ B VIII rell

⁵ In §§ 55-56 numeri varie traduntur

⁶ lac Dellefsen, Mommsen

⁷ Vll nummo, numero (add HS cdd nonnulli pondo
 cd Par 6801)

^a A wooden edifice on wheels in two or more stages, which were raised and lowered, opened and closed, by machinery, on them performances were given

^b So cd B The number 124 or 134 of the other cdd is of course much too small

^c So cd B The other MSS give 7 and 9 The higher number is so absurd that perhaps we should omit *inter* and

occasion on which criminals made to fight with wild animals had all their equipment made of silver, a practice nowadays rivalled even in our municipal towns Gaius Antonius gave plays on a silver stage, and so did Lucius Murena, and the emperor Gaius Caligula brought on a scaffolding ^a in the circus which had on it 124,000 ^b pounds weight of silver His successor Claudius when celebrating a triumph after the conquest of Britain, advertised by placards ^{a D 37-41} that among the gold coronets there was one having a weight of 7000 ^c pounds contributed by Hither Spain and one of 9000 ^c from Gallia Comata His immediate successor Nero covered the theatre of ^{a D 43} Pompey with gold for one day's purpose, when he was to display it to Tiridates King of Armenia Yet how small was the theatre in comparison with Nero's Golden Palace which goes all round the city ! ^{a D 54-68}

XVII The gold contained in the national treasury of Rome in the consulship of Sextus Julius ^{156 B C} and Lucius Aurelius, seven years before the third Punic War, amounted to 17,410 lbs, the silver to 22,070 lbs, and in specie there was 6,135,400 sesterces, in the consulship of Sextus Julius and ^{91 B C} Lucius Maicius, that is to say, at the beginning of the war with the allies, ^a there was lbs of gold and 1,620,831 lbs of silver Gaius Julius Caesar, on first entering Rome during the civil war that bears ^{49 B C} his name, drew from the treasury 15,000 gold ingots, 30,000 silver ingots, and 30,000,000 sesterces in coin, at no other periods was the state more wealthy

translate 'that there were crowns weighing in all 7000 pounds contributed by Hither Spain and 9000 pounds from Gallia Comata'

^a See n on § 20

PLINY NATURAL HISTORY

ies p locupletior intulit et Aemilius Paulus Perseo regē victo e Macedonia praedia [MMM], a quo tempore populus Romanus tributum pendere desit

57 XVIII Laquearia, quae nunc et in privatis domibus auro teguntur, post Carthaginem eversam primo in Capitolio inaurata sunt censura L Mummi inde transiere in camaras quoque et parietes, qui iam et ipsi tamquam vasa inaurantur, cum variae sua aetas de Catulo existimaverit, quod tegulas aereas Capitolii inaurasset

58 XIX Primos inventores auri, sicut metallorum fere omnium, septimo volumine diximus praecipuam gratiam huic materiae fuisse arbitror non colore, qui clavior in argento est magisque diei similis, ideo militaribus signis familiarior, quoniam¹ longius fulget, manifesto errore eorum, qui colorem siderum placuisse in auro arbitrantur, cum in gemma aliisque
59 rebus non sit praecipuus nec pondere aut facilitate materiae praelatum est ceteris metallis, cum cedat per utrumque plumbo,² sed quia rerum uni nihil igne deperit, tuto³ etiam in incendis rogisque quin immo quo saepius arsit, proficit ad bonitatem,

¹ *Vl* quo nimis quoniam in us *conr* Mayhoff

² plumbo *cdd* plumbum *conr* K C Bailey

³ *Vll* tota, toto

^a King of Macedonia, defeated at Pydna, 168 B C

^b It was not levied after 167 B C

^c *I e* he was by no means universally approved

^d This is not true

Aemilius Paulus also after the defeat of King Perseus ^a paid in to the treasury from the booty won in Macedonia 300 million sesterces, and from that date onward the Roman nation left off paying the citizens' property-tax ^b

XVIII At the present day we see ceilings covered with gold even in private houses, but they were first gilded in the Capitol during the censorship of Lucius Mummius after the fall of Carthage 146 B C
From ceilings the use of gilding passed over also to vaulted roofs and walls, these too being now gilded like pieces of plate, whereas a variety of judgements were passed ^c on Catulus by his contemporaries for having gilded the brass tilings of the Capitol Between 79 and 60 B C

XIX We have already said in Book VII who VII 97
were the people who first discovered gold, and almost all of the metals likewise Popularity of gold I think that the chief popularity of this substance has been won not by its colour, that of silver being brighter and more like daylight, which is the reason why it is in more common use for military ensigns because its brilliance is visible at a greater distance, those persons who think that it is the colour of starlight in gold that has won it favour being clearly mistaken because in the case of gems and other things with the same tint it does not hold an outstanding place Nor is it its weight or its malleability that has led to its being preferred to all the rest of the metals, since in both qualities it yields ^d the first place to lead, but because gold is the only thing that loses no substance by the action of fire, but even in conflagrations and on funeral pyres receives no damage Special qualities of gold Indeed as a matter of fact it improves in quality the more often it is fired, and fire serves as a test of its goodness,

PLINY NATURAL HISTORY

anque experimentum ignis est, ut simili colore
iubeat ignescatque et ipsum, obrussam vocant
60 primum autem bonitatis argumentum quam difficil-
lime accendi praeterea mirum, prunae¹ violentis-
simi ligni indomitum palea citissime ardescere atque,
ut purgetur, cum plumbo coqui

Altera causa pretii maiori, quod minimum usus
deterit, cum argento, aere, plumbo lineae praedu-
61 cantur manusque sordescant decidua materia nec
aliud laxius dilatatur aut numerosius dividitur, utpote
cuius unciae in septingenas quinquagenas pluresque
bratteas quaternum utroque digitorum spaigantur
ciassissimae ex iis Praenestinae vocantur, etiamnum
retinentes² nomen Fortunae inauisito fidelissime ibi
62 simulacio proxima brattea quaestoria appellatur
Hispania stugiles³ vocantur parvolas massas super
omnia solum in massa aut ramento capitur cum
cetera in metallis reperia igni perficiantur, hoc
statim aurum est consummatamque materiam suam
protinus habet, cum ita inventum haec enim in-
ventio eius naturalis est, alia, quam dicemus, coacta
super cetera non robigo ulla, non aerugo, non aliud
ex ipso, quod consumat bonitatem minuatur pondus
iam contra salis et aceti sucos, domitores rerum,
constantia⁴ superat omnia, superque⁵ netur ac

¹ pruna *cd* *deperd recte* ?

² retinente *B*

³ *Vll* strigile, striges (*B*)

⁴ constantiam *B*

⁵ superat omnia superque *Mayhoff* superque superat
omnia *B* superque omnia *rell*

^a Cf Schol ad Thuc II 13 ὀβρυζον χρυσίων

^b A variant reading 'striges' gives 'grooves'

making it assume a similar red hue and itself becomes the colour of fire, this process is called assaying.^a The first proof of quality in gold is however its being affected by fire with extreme difficulty, beside that, it is remarkable that though invincible to live coal made of the hardest wood it is very quickly made red hot by a fire of chaff, and that for the purpose of purifying it it is roasted with lead

Another more important reason for its value is that it gets extremely little worn by use, whereas, with silver, copper and lead, lines may be drawn, and stuff that comes off them dirties the hand. Nor is any other material more malleable or able to be divided into more portions, seeing that an ounce of gold can be beaten out into 750 or more leaves 4 inches square. The thickest kind of gold leaf is called Palestrina leaf, still bearing the name taken from the faithfully gilded statue of Fortune in that place. The foil next in thickness is styled Quaestorian leaf. In Spain tiny pieces of gold are called scrapers.^b Gold more than all other metals is found unalloyed in nuggets or in the form of detritus. Whereas all other metals when found in the mines are brought into a finished condition by means of fire, gold is gold straight away and has its substance in a perfect state at once, when it is obtained by mining. This is the natural way of getting it, while another which we shall describe is artificial. More ^{§§ 63, 64} than any other substance gold is immune from rust or verdigris or anything else emanating from it that wastes its goodness or reduces its weight. Moreover in steady resistance to the overpowering effect of the juices of salt and vinegar it surpasses all things, and over and above that it can be spun

PLINY NATURAL HISTORY

- 63 *textur lanæ modo vel sine lana tunica aurea tunc unphasse Tarquinius Priscus Verrius docet, nos vidimus Agrippinam Claudii principis, edente eo navalis proeli spectaculum, adsidentem et indutam paludamento aureo textili sine alia materia Attalici vero iam pridem interitui, invento regum Asiae*
- 64 **XX** Marmor et is, quæ candescere non possunt, ovi candido inlinitur, ligno glutini ratione compositi,¹ leucophorum vocant quid sit hoc aut quemadmodum fiat, suo loco docebimus aes inaurari argento vivo aut certe hydrargyro legitimum erat, de quis, ut ² dicemus illorum naturam reddentes, excogitata fias
- 65 est namque aes cruciatur in primis ³ accensumque restringitur sale, aceto, alumine, postea examinatur,⁴ an satis recoctum sit, splendore deprehendente, iterumque exhalatur ⁵ igni, ut possit, edomitum mixtis pumice et ⁶ alumine, argento vivo inductas accipere bratteas alumen et in purgando vim habet qualem esse diximus plumbo
- 66 **XXI** Aurum invenitur in nostro orbe, ut omittamus Indicum a formicis aut apud Scythas grypis

¹ composito *vel* re composita *con* Mayhoff

² ut *cd* Par 6801 *om* *rell*

³ primis *add* prunis *con* D'Arcy Thompson

⁴ examinatur *K C* Bailey exharenatur

⁵ exhalatur *add* exharenatur Detlefsen excitatur *con* Mayhoff

⁶ et *add* *K C* Bailey

^a Probably Attalus I of Pergamum, 241-197 B C

^b Literally 'fluid silver'

^c See XXXV 183 ff

^d *I e* alum purifies copper as lead purifies gold

into thread and woven into a fabric like wool, even without an addition of wool. Vennius informs us that Tarquinius Priscus celebrated a triumph wearing a golden tunic. We have in our own times seen the Emperor Claudius's wife Agrippina, at a show at which he was exhibiting a naval battle, seated at his side wearing a military cloak made entirely of cloth of gold. For a long period gold has been woven into the fabric called cloth of Attalus,^a an invention of Kings of Asia.

*Traditional
dates 616-
578 B C*

XX On marble and other materials incapable of being raised to a white heat gold is laid with white of egg, on wood it is laid with glue according to a formula, it is called leucophorum, white-bearing, what this is and how it is made we will explain in its proper place. The regular way to gild copper XXV 36 would be to use natural or at all events artificial quicksilver,^b concerning which a method of adulteration has been devised, as we shall relate in describing §§ 100 125 the nature of those substances. The copper is first subjected to the violence of fire, then, when it is red hot, it is quenched with a mixture of brine, vinegar, and alum,^c and afterwards put to a test, its brilliance of colour showing whether it has been sufficiently heated, then it is again dried in the fire, so that, after a thorough polishing with a mixture of pumice and alum, it is able to take the gold-leaf laid on with quicksilver. Alum has the same cleaning property here that we said is found in lead § 60.

XXI Gold in our part of the world—not to speak of the Indian gold obtained from ants or the gold dug up by griffins in Scythia <sup>*Methods for
discovering
gold*</sup>—is obtained in three

^a This Indian and Scythian gold was perhaps got from Tibet. The stories about it go back to Herodotus.

PLINY NATURAL HISTORY

erutum, tribus¹ modis fluminum ramentis ut in Tago Hispaniae, Pado Italiae, Hebro Phaciae, Pactolo Asiae, Gange Indiae, nec ullum absolutius aurum est, ut cursu ipso attrituque perpolitum alio modo puteorum scrobibus effoditur aut in iuina montium quaeritur², utraque ratio dicatur

67 Aurum qui quaerunt, ante omnia segillum³ tollunt, ita vocatur indicium alveus hic est haerenae, quae lavatur, atque ex eo, quod resedit, coniectura capitur invenitur aliquando in summa tellure protinus laeta felicitate, ut nuper in Delmatia principatu Neironis singulis diebus etiam quinquagenas libras fundens cum ita inventum est in summo caespite, talutum⁴ vocant, si et aurosa tellus subest cetero montes Hispaniarum, auidi sterilesque et in quibus nihil aliud gignatur, huic⁵ bono fertiles esse coguntur

68 Quod puteis foditur, canalicium vocant, alii canalicense, marmoris glareae inhaerens, non illo modo, quo in oriente⁶ sappiro atque Thebaico alisque in gemmis scintillat, sed micans⁷ amplexu⁸ marmoris vagantur hi venarum canales per latera puteorum et huc illuc, inde nomine invento, tellusque ligneis
69 columnis suspenditur quod effossum est, tunditur,

¹ tribus *Bergk* apud nos tribus
quaeritur *B* quare *rell*

³ | l segitulum

⁴ talutum *B* talutatium *rell* alutatium *Hardourn*
alutatium *Gronov* an alutium (cf XXXIV, 157)?

⁵ hoc *conr Warmington*

⁶ orientis *conr Mayhoff*

⁷ micans *B²* micas

⁸ amplexu *Salmasius* amplexum

ways in the detritus of rivers, for instance in the Tagus in Spain, the Po^o in Italy, the Maritza in Thrace, the Sarabat in Asia Minor and the Ganges in India, and there is no gold that is in a more perfect state, as it is thoroughly polished by the mere friction of the current. Another method is by sinking shafts, or it is sought for in the fallen debris of mountains. Each of these methods must be described.

People seeking for gold begin by getting up *segullum*^a—that is the name for earth that indicates the presence of gold. This is a pocket of sand, which is washed, and from the sediment left an estimate of the vein is made. Sometimes by a rare piece of luck a pocket is found immediately, on the surface of the earth, as occurred recently in Dalmatia when Nero was emperor, one yielding fifty pounds ^{A D 54-68} weight of gold a day. Gold found in this way in the surface crust is called *talutrum* if there is also auriferous earth underneath. The otherwise dry, barren mountains of the Spanish provinces which produce nothing else whatever are forced into fertility in regard to this commodity.

Gold dug up from shafts is called 'channelled' or *Gold-mining* 'trenched' gold, it is found sticking to the grit of marble, not in the way in which it gleams in the lapis lazuli of the East and the stone^b of Thebes and in other precious stones, but sparkling in the folds of the marble. These channels of veins wander to and fro along the sides of the shafts, which gives the gold its name, and the earth is held up by wooden props. The substance dug out is crushed, washed,

^a *Segullo* is still the miners' name for surface earth in auriferous deposits in Castile.

^b Apparently some micaceous granite.

PLINY NATURAL HISTORY

lavatui, unitui, molitui in farinam, farinam¹ a pila scudem² vocant, argentum, quod exit a fornace, sudorem quae e camino iactatur spurcitia in omni metallo scoria appellatur haec in auro tunditui iterumque coquitur catini fiunt ex tasconio, hoc est terra alba similis argillae, neque enim alia flatum ignemque et ardentem materiam tolerat

- 70 Tertia ratio opera vicerit Gigantum cuniculis per magna spatia actis cavantur montes lucernarum ad lumina, eadem mensura vigiliarum est, multisque mensibus non cernitur dies

Arrugias id genus vocant siduntque iimae subito et opprimunt operatos,³ ut iam minus temerarium videatur e profundo maris petere margaritas atque purpuras tanto nocentiores fecimus terras¹ relinquuntur itaque formices crebri montibus sustinendis

- 71 occursant in utroque genere silices, hos igne et aceto rumpunt, saepius vero, quoniam id cuniculos⁴ vapore et fumo strangulat, caedunt fractarius clibias ferri habentibus egeruntque umeris noctibus ac diebus per tenebras proximis tradentes, lucem novissimi cernunt si longior videtur silex, latus

¹ molitur (aut mollitur) in farinam, farinam Warmington mollitur (B, cd 'Par 6801 molitur rell) farinam (in farinam cd Flor Ricc et ut videtur cd Par 6801)

² a pila scudem Madvig a p cudem Dellefsen apitascudem B varia rell cdd et edd

³ Vll operantes, operarios

⁴ id cuniculos B in cuniculis rell

^a A given amount of oil is known to last a specified time

^b Arrugia is said to be the term for a deep mine in Spain to day The word is probably connected *ορύσσω*, dig

fired and ground to a soft powder. The powder from the mortar is called the '*scudes*', and the silver that comes out from the furnace the 'sweat', the dirt thrown out of the smelting-furnace in the case of every metal is called '*scoria*,' slag. In the case of gold the scoria is pounded and fired a second time, the crucibles for this are made of tasconium, which is a white earth resembling clay. No other earth can stand the blast of air, the fire, or the intensely hot material.

The third method will have outdone the achievements of the Giants. By means of galleries driven for long distances the mountains are mined by the light of lamps—the spells of work are also measured by lamps,^a and the miners do not see daylight for many months.

The name for this class of mines is *arrugiae*,^b also cracks give way suddenly and crush the men who have been at work, so that it actually seems less venturesome to try to get pearls and purple-fishes out of the depth of the sea so much more dangerous have we made the earth! Consequently arches are left at frequent intervals to support the weight of the mountain above. In both kinds of mining masses of flint are encountered, which are burst asunder by means of fire and vinegar, though more often, as this method makes the tunnels suffocating through heat and smoke, they are broken to pieces with crushing-machines carrying 150 lbs of iron, and the men carry the stuff out on their shoulders, working night and day, each man passing them on to the next man in the dark, while only those at the end of the line see daylight. If the bed of flint seems too long, the miner follows along the side of it

PLINY NATURAL HISTORY

sequitur fossor ambitque et tamen in silice facilior
72 existimatur opera, est namque teria ex quodam
argillae genere glarea mixta—gangadium vocant—
prope inexpugnabilis cuneis eam ferreis adgredi-
untur et isdem malleis nihilque durius putant, nisi
quod inter omnia auri fames durissima est peracto
opere cervices fornicum ab ultimo caedunt¹ dat
signum rima, eamque² solus intellegit in cacumine
73 eius montis vigil hic voce, nutu³ evocari iubet
operas pariterque ipse devolat mons fiactus cadit
ab sese longe flagore qui concipi humana mente
non possit, aequae et flatu incredibili spectant vic-
tores ruinam naturae nec tamen adhuc aurum est
nec scire esse, cum foderent, tantaque ad pericula
et impendia satis causae fuit sperare quod cuperent
74 Alius par labor ac vel maioris impendii flumina ad
lavandam hanc ruinam iugis⁴ montium obiter duxere
a centesimo plerumque lapide, corrugos vocant, a
conrivatione credo mille et hic labores praeceptis

¹ cadunt *B*

² rima eamque *cd Par 6801* ruina eamque *B et al*
ruinamque *rell* ruinae eamque *Gelen* ruinae rima eamque
Detlefsen

³ voce nutu *B* voce ictuve *cd Tolet* vocent utve *rell*
voce in tutum *Detlefsen*

⁴ fortasse <a> vel <ab> iugis

and goes round it And yet flint is considered to involve comparatively easy work, as there is a kind of earth consisting of a sort of potter's clay mixed with gravel, called *gangadia*, which it is almost impossible to overcome They attack it with iron wedges and the hammer-machines mentioned above, and it is thought to be the hardest thing that exists, except greed for gold, which is the most stubborn of all things When the work is completely finished, beginning with the last, they cut through, at the tops, the supports of the arched roofs A crack gives warning of a crash, and the only person who notices it is the sentinel on a pinnacle of the mountain He by shout and gesture gives the order for the workmen to be called out and himself at the same moment flies down from his pinnacle The fractured mountain falls asunder in a wide gap, with a crash which it is impossible for human imagination to conceive, and likewise with an incredibly violent blast of air The miners gaze as conquerors upon the collapse of Nature And nevertheless even now there is no gold so far, nor did they positively know there was any when they began to dig, the mere hope of obtaining their coveted object was a sufficient inducement for encountering such great dangers and expenses

Another equally laborious task involving even greater expense is the incidental operation of previously bringing streams along mountain-heights frequently a distance of 100 miles for the purpose of washing away the debris of this collapse, the channels made for this purpose are called *corrugi*, a term derived I believe from *convratio*, a uniting of streams of water This also involves a thousand

PLINY NATURAL HISTORY

esse libramentum oportet, ut ruat verius quam fluat, itaque altissimis partibus ducitur convalles et intervalla substructis canalibus iunguntur alibi rupes inviae caeduntur sedemque trabibus cavatis praebere
 75 coguntur qui caedit, funibus pendet, ut procul intuenti species ne ferarum quidem, sed altum fiat pendentes maiore ex parte librant et lineas itineri praeducunt, quaque insistentis vestigis hominis locus non est, amnes trahuntur ab homine¹ vitium lavandi est, si fluens amnis lutum inportet, id genus terrae urium vocant ergo per silices calculosve ducunt et urium evitant ad capita deiectus in supercilis montium piscinae cavantur ducenos pedes in quasque partes et in altitudinem denos emissaria in iis quina pedum quadratorum ternum fere relinquuntur, ut repleto stagno excussis opturamentis
 76 erumpat torrens tanta vi ut saxa provolvat alius etiamnum in plano labor fossae, per quas profluat, cavantur—agogas vocant—, hae sternuntur gradatim ulce frutex est roris marini similis, asper autumque retinens latera cluduntur tabulis, ac per

¹ trahuntur ab homine *B* trahuntur ad homines *rell*
 trahunt omne *Hardouin*

^a *I e* the gold bearing debris

^b The identification is doubtful in view of the alleged resemblance to rosemary Rosemary may be called 'rough,' but it is not prickly like gorse

tasks, the dip of the fall must be steep, to cause a rush rather than a flow of water, and consequently it is brought from very high altitudes. Goiges and crevasses are bridged by aqueducts carried on masonry, at other places impassable rocks are hewn away and compelled to provide a position for hollowed troughs of timber. The workman hewing the rock hangs suspended with ropes, so that spectators viewing the operations from a distance seem to see not so much a swarm of strange animals as a flight of birds. In the majority of cases they hang suspended in this way while taking the levels and marking out the lines for the route, and rivers are led by man's agency to run where there is no place for a man to plant his footsteps. It spoils the operation of washing if the current of the stream carries mud along with it—an earthy sediment of this kind is called *urum*. Consequently they guide the flow over flint stones and pebbles, and avoid *urum*. At the head of the waterfall on the brow of the mountains reservoirs are excavated measuring 200 ft each way and 10 ft deep. In these there are left five sluices with apertures measuring about a yard each way, in order that when the reservoir is full the stopping-barriers may be struck away and the torrent may burst out with such violence as to sweep forward the broken rock^a. There is also yet another task to perform on the level ground. Trenches are excavated for the water to flow through—the Greek name for them means 'leads', and these, which descend by steps, are floored with gorse^b—this is a plant resembling rosemary, which is rough and holds back the gold. The sides are closed in with planks, and the channels are carried

PLINY NATURAL HISTORY

- praerupta suspenduntur canales ita profluens teria
in mare labitur ruptusque mons diluitur, ac longe
terras in mare his de causis iam promovit Hispania
77 in priore genere quae exhauriuntur immenso labore,
ne occupent puteos, in hoc rigantur aurum arugia
quaesitum non coquitur, sed statim suum¹ est in-
veniuntur ita massae, nec non in puteis, et denas
excedentes libras, palagas,² alii palacurnas,³ idem
quod minutum est balucem vocant ulex siccatur,
uritur, et cinis eius lavatur substrato caespite hei-
78 boso, ut sidat aurum vicena milia pondo ad hunc
modum annis singulis Asturiam atque Callaeciam et
Lusitaniam praestare quidam prodiderunt, ita ut
pluimum Asturia gignat neque in alia terrarum
parte tot saeculis perseverat haec fertilitas Italiae
parci vetere interdicto patrum diximus, alioqui nulla
fecundior metallorum quoque erat tellus extat lex
censoria Victumularum⁴ aurifodinae in Vercellensi
agro, qua cavebatur, ne plus quinque milia hominum
in opere publicani haberent
79 XXII Aurum faciendi est etiamnum una ratio ex
auripigmento, quod in Syria foditur pictoribus in
summa tellure, auri colore, sed fragile lapidum
speculatum modo invitaveratque spes Garum prin-

¹ sudum *coni Hermolaus Barbarus*

² palagas *B palacas rell palacras ed Basil*

³ *Vll psalacurnas, palacranas*

⁴ Victumularum *B Vll victim, vittim (vici) Ictimu
lorum Hermolaus Barbarus coll Strab*

on arches over steep pitches Thus the earth carried along in the stream slides down into the sea and the shattered mountain is washed away, and by this time the land of Spain owing to these causes has encroached a long way into the sea The material drawn out at such enormous labour in the former kind of mining is in this latter process washed out, § 67 so as not to fill up the shafts The gold obtained by means of an *arrugia*^a does not have to be melted, but is pure gold straight away In this process nuggets are found and also in the shafts, even weighing more than ten pounds They are called *palagae* or else *palacurnae*, and also the gold in very small grains *baluce* The gorse is dried and burnt and its ash is washed on a bed of grassy turf so that the gold is deposited on it According to some accounts Asturia and Callaecia and Lusitania produce in this way 20,000 lbs weight of gold a year, Asturia supplying the largest amount Nor has there been in any other part of the world such a continuous production of gold for so many centuries We have stated that by an old prohibiting decree of the senate Italy is protected from exploitation, otherwise no country would have been more productive in metals, as well as in crops There is extant a ruling of the censors relating to the gold mines of *Victumulae* in the territory of *Vercellae* which prohibited the farmers of public revenues from having more than 5000 men engaged in the work

XXII There is moreover one method of making gold out of *orpiment*^b which is dug up in Syria for use by painters, it is found on the surface of the earth, and is of a gold colour, but is easily broken, like looking-glass stone Hopes inspired by it had

PLINY NATURAL HISTORY

cipem avidissimum auri, quam ob rem iussit excoqui magnum pondus et plane fecit aurum excellens, sed ita parvi ponderis, ut detrimentum sentiret propter avaritiam expertus, quamquam auripigmenti librae X IIII permutarentur nec postea temptatum ab ullo est

- 80 XXIII Omni auro inest argentum vario pondere, alibi decuma parte,¹ alibi octava in uno tantum Callaeciae metallo, quod vocant Albucrarensē, tricensima sexta portio inventi, ideo ceteris praestat ubicumque quinta argenti portio est, electrum vocatur, scobes hae reperiuntur in canaliensi fit et cura electrum argento addito quod si quantam portio-
- 81 nem excessit, incudibus non resistit vestusta et electro auctoritas Homero teste, qui Menelai regiam auro, electro, argento, eboie fulgere tradit Minervae templum habet Lindos insulae² Rhodiorum, in quo Helena sacravit calicem ex electo, adicit historia, mammae suae mensura electi nativa est ad lucernarum lumina clarius argento splendere quod est nativum, et venena deprehendit namque discurrunt in calicibus arcus caelestibus similes cum igneo stridore et gemina ratione praedicunt

¹ decuma parte *B* non *vell* (nona *cd* *Par* *Lat* 6797
dena alibi nona *cd* *Par* 6801)

² insula *B* in insula *con* *Mayhoff*

^a Properly the word means 'amber' See § 1, note

^b *Od* IV 71 ff

attracted the Emperor Gaius Caligula, who was AD 37-41 extremely covetous for gold, and who consequently gave orders for a great weight of it to be smelted, and as a matter of fact it did produce excellent gold, but so small a weight of it that he found himself a loser by his experiment that was prompted by avarice, although orpiment sold for 4 denarii a pound, and no one afterwards has repeated the experiment

XXIII All gold contains silver in various proportions, a tenth part in some cases, an eighth in others In one mine only, that of Callaecia called the Albucrara mine, the proportion of silver found is one thirty-sixth, and consequently this one is more valuable than all the others Wherever the proportion of silver is one-fifth, the ore is called electrum ^a, grains of this are found in 'channelled' Cf § 68 gold An artificial electrum is also made by adding silver to gold If the proportion of silver exceeds one-fifth, the metal produced offers no resistance on the anvil Electrum also held a high position in old times, as is evidenced by Homer ^b who represents the palace of Menelaus as resplendent with gold, electrum, silver and ivory There is a temple of Athena at Lindus of the island of Rhodes in which there is a goblet made of electrum, dedicated by Helen, history further relates that it has the same measurement as her breast A quality of electrum is that it shines more brightly than silver in lamp-light Natural electrum also has the property of detecting poisons, for semicircles resembling rainbows run over the surface in poisoned goblets and emit a crackling noise like fire, and so advertise the presence of poison in a twofold manner

PLINY NATURAL HISTORY

- 82 XXIV Aurea statua prima omnium nulli inanitate et antequam ex aere aliqua modo fieret, quam vocant holosphyraton, in templo Anaitidis posita dicitur quo situ terrarum nomen hoc signavimus,
- 83 numine gentibus illis saciatissimo diuina ea est Antonii Parthicis rebus, scitumque narratur veteranorum unius Bononiae hospitali divi Augusti cena, cum interrogatus¹ esset, sciretne² eum, qui primus violasset id numen, oculis membrisque captum expressasse, respondit enim cum maxime Augustum ex crure³ eius cenare seque illum esse totumque sibi censum ex ea rapina hominum primus et auream statuam et solidam LXX⁴ circiter olympiade Gorgias Leontinus Delphis in templo posuit sibi tantus erat docendae artis oratoriae quaestus
- 84 XXV Aurum pluribus modis pollet in remediis vulneratisque et infantibus adplicatur, ut minus noceant quae inferantur veneficia est et ipsi superlato⁵ vis malefica, gallinarum quoque et pecuariorum⁶ feturis remedium abluere inlitum⁷ et spargere eos, quibus mederi velis torretur et cum

¹ interrogatus *B* interrogaretur *rell*

² esset sciretne *B*² esset *B*¹ essetne (*aut* essene) verum *rell* esset verumne esset *Ian*

³ cruore *cd Par* 6801

⁴ LXXXX *Beigl*

superlito *Gronov*

⁶ pecuariorum *cd Flor Ricc* pecorum *rell*

⁷ inlitum *Gronov* inlatum

^a V 83, where Anaitica is said to be a region divided from Cappadocia by the upper Euphrates

^b 500-497 B C But Gorgias the 'sophist' visited Athens in 427 B C and professed rhetoric and philosophy there in subsequent years Probably the right date is the 90th Olympiad (420-417 B C)

XXIV The first gold statue of all that was made of solid metal and even before any was made of bronze, of the kind called 'made of solid beaten metal,' is said to have been erected in the temple of Anatis, in the region of the earth where we have designated this name,^a that goddess' deity being held in the highest reverence by those races. This statue was taken as booty during the campaigns of Antonius in Parthia, and a story is told of a witty saying of one of the veterans of our army who was being entertained as a guest at dinner by his late lamented Majesty Augustus at Bologna. He was asked whether it was true that the man who was the first to commit this sacrilege against that deity was struck blind and paralysed and so expired. His answer was that the emperor was at that very moment eating his dinner off one of the goddess's legs, and that he himself was the perpetrator of the sacrilege and owed his entire fortune to that piece of plunder. The first solid gold statue of a human being was one of himself set up by Gorgias of Leontini in the temple at Delphi about the 70th Olympiad.^b So great were the profits to be made by teaching the art of oratory!

XXV Gold is efficacious as a remedy in a variety of ways, and is used as an amulet for wounded people and for infants to render less harmful poisonous charms that may be directed against them. Gold has itself however a maleficent effect if carried over the head, in the case of chickens and the young of cattle as well as human beings. As a remedy it is smeared on, then washed off and sprinkled on the persons you wish to cure. Gold is also heated with twice its weight of salt and

*Golden
statues*

*Medicinal
uses of
gold*

PLINY NATURAL HISTORY

- salis gemino pondere, triplici misyis ac rursus cum in salis portionibus et uno lapidis, quem schiston vocant ita virus trahit rebus una crematis in fictili vase,
- 85 ipsum purum et incorruptum reliquus cinis servatus in fictili olla, ex qua ¹ inlitas ² lichenas in facie lomento eo convenit abluī fistulas etiam sanat et quae vocantur haemorrhoides quodsi titus pumex adiciatur, putria ulcera et taetū odoris emendat, ex melle vero decoctum cum melanthio inlitum umbilico leniter solvit alvum auro verrucas curari M Varro auctor est
- 86 XXVI Chrysocollaumor est in puteis, quos diximus, per venam auri defluens crassescente limo nigribus hibernis usque in duritiam pumicis laudatorem eandem in aerariis metallis et proximam in aegentariis fieri conpertum est invenitur et in plumbaris vilior etiam ³ auraria in omnibus autem his metallis fit et cura multum infra naturalem illam inmissis in venam aquis leniter hieme tota usque in Iunium mensem, dein siccatis Iunio et Iulio, ut plane intellegatur nihil aliud chrysocolla quam vena putris
- 87 nativa duritia maxime distat, uvam vocant et tamen illa quoque herba, quam lutum appellant, tinguntur natura est, quae lino lanaeve, ad sucum

¹ qua B aqua rell ² inlitas B² inlitus
³ fortasse tamen

^a *Lomentum* is properly barley meal mixed with rice

^b See § 4, note

^c Or 'Another sort is found in lead mines, but it is inferior to the true "gold" kind'

three times its weight of copper pyrites, and again with two portions of salt and one of the stone called 'splittable' Treated in this way it draws poison out, when the other substances have been burnt up with it in an earthenware crucible while it remains pure and uncorrupted itself The ash remaining is kept in an earthenware jar, and eruptions on the face may well be cleansed away by being smeared with this lotion ^a from the jar It also cures fistulas and what are called hæmorrhoids With the addition of ground pumicestone it relieves putrid and foul smelling ulcers, while boiled down in honey and git, and applied as a liniment to the navel it acts as a gentle aperient According to Marcus Varro gold is a cure for warts

XXVI Gold-solder ^b is a liquid found in the shafts we spoke of, flowing down along a vein of gold, with a slime that is solidified by the cold of winter even to the hardness of pumicestone A more highly spoken of variety of the same metal has been ascertained to be formed in copper mines, and the next best in silver-mines A less valuable sort also with an element of gold is also found in lead mines ^c In all these mines however an artificial variety is produced that is much inferior to the natural kind referred to, the method is to introduce a gentle flow of water into the vein all winter and go on till the beginning of June and then to dry it off in June and July, clearly showing that gold-solder is nothing else than the putrefaction of a vein of metal Natural gold-solder, known as 'grape,' differs very greatly from the artificial in hardness, and nevertheless it also takes a dye from the plant called yellow-weed It is of a substance that absorbs moisture,

*Gold
solder*
§§ 67 & 77

PLINY NATURAL HISTORY

bibendum tunditur in pila, dein tenui cribro cernitur, postea molitur ac deinde tenuius cribratur quidquid non transmeat, repetitur in pila, dein
 88 molitur pulvis semper in catinos digeritur et ex aceto maceiatur, ut omnis duntaxat solvatur, ac rursus tunditur, dein lavatur, in conchis siccatur, tum tingitur alumine schisto et herba supra dicta pingiturque, antequam pingat refert quam bibula docilisque sit nam nisi rapuit colorem, adduntur et scytanum atque turbistum, ita vocant medicamenta solbere cogentia

89 XXVII Cum tinere pictores, orobitin vocant eiusque duo genera faciunt elutam,¹ quae servatur in lomentum, et liquidam globulis sudore resolutis haec utraque genera in Cypro fiunt laudatissima autem est in Aemelia, secunda in Macedonia, largissima in Hispania, summa² commendationis, ut colorem in herba segetis laete virentis quam simile
 90 lime reddat visumque iam est Neronis principis spectaculis haenam circi chrysocolla sterni, cum ipse concolori panno aurigaturus esset indocta opificum turba tribus eam generibus distinguit asperam, quae

¹ luteam *Hermolaus Barbarus fortasse recte* (cf § 91)

² *Vl* summae summa est *Ian*

^a Cf XXXV 186

^b These two substances have not been identified

^c Perhaps we should adopt the reading *luteam*

like flax or wool. It is pounded in a mortar and then passed through a fine sieve, and afterwards milled and then sifted again with a finer sieve, everything that does not pass through the sieve being again treated in the mortar and then milled again. The powder is all along separated off into bowls and steeped in vinegar so as to dissolve all hardness, and then is pounded again and then used in shells and left to dry. Then it is dyed by means of 'splittable' alum^a and the plant above mentioned and so given a colour before it serves as a colour itself. It is important how absorbent it is and ready to take the dye, for if it does not at once catch the colour, scytanum and turbistum^b must be added as well—those being the names of two drugs producing absorption.

XXVII When painters have dyed gold-solder, they call it orobitis, vetch-like, and distinguish two kinds, the purified,^c which is kept for a cosmetic, and the liquid, in which the little balls are made into a paste with a liquid. Both of these kinds are made in Cyprus, but the most highly valued is in Armenia and the second best in Macedonia, while the greatest quantity is produced in Spain, the highest recommendation in the latter being the quality of reproducing as closely as possible the colour in a bright green blade of corn. We have before now seen at the shows given by the emperor Nero the sand of the circus sprinkled with gold-A D 54solder when the emperor in person was going to give an exhibition of chariot-driving wearing a coat of that colour. The unlearned multitude of artisans distinguish three varieties of the substance, the rough, which is valued at 7 denarii a pound, the

PLINY NATURAL HISTORY

- taxatur¹ in libias X vii, mediam quae X v, attritam, quam et herbaceam vocant, X iii sublinunt autem harenosam, priusquam inducant, atiamento et
- 91 Paraetonio haec sunt tenacia eius, colore blanda Paraetonium, quoniam est natura pinguisimum et propter leviorem tenacissimum, atiamento aspergitur, ne Paraetoni candor palliorem chrysocollae adferat luteam putant a luto herba dictam, quam ipsum caeruleo subtritam pro chrysocolla inducunt, vilissimo genere atque fallacissimo
- 92 XXVIII Usus chrysocollae et in medicina est ad purganda vulnera cum cera atque oleo eadem per se arida siccatur et² contrahit datui et in angina orthopnoeae lingenda cum melle concitat vomitiones, miscetur et collyrius ad cicatrices oculorum ac viridibus emplastris ad dolores mitigandos, cicatrices trahendas hanc chrysocollam medici acesim appellant, quae non est orobitis
- 93 XXIX Chrysocollam et aurifices sibi vindicant adglutinando auro, et inde omnes appellatas similiter virentes dicunt temperatur autem Cypria aerugine et pueri in pubis urina addito nitro tenturque Cyprio

¹ mataxatur *B* iam taxatur *com Mayhoff*

² siccatur et *B*, *cd Par* 6801 et sicca *rell*

^a *Paraetonium*, see XXXV, 30, 36

^b *ἄκεαις*, a remedy, healing

^c Or, child (of either sex)

middling, which is 5 denarii, and the crushed, also called the grass-green kind, 3 denarii. Before applying the sandy variety they put on a preliminary coating of black dye and pure white chalk^a these serve to hold the gold-solder and give a softness of colour. As the pure chalk is of a very unctuous consistency and extremely tenacious owing to its smoothness, it is sprinkled with a coat of black, to prevent the extreme whiteness of the chalk from imparting a pale hue to the gold-solder. The yellow gold-solder is thought to derive its name from the plant yellow-weed, which is itself often pounded up with steel-blue and applied for painting instead of gold-solder, making a very inferior and counterfeit kind of colour.

XXVIII Gold-solder is also used in medicine, mixed with wax and olive oil, for cleansing wounds, likewise applied dry by itself it dries wounds and draws them together. It is also given in cases of quinsy or asthma, to be taken as an electuary with honey. It acts as an emetic, and also is used as an ingredient in salves for sores in the eyes and in green plasters for relieving pains, and drawing together scars. This kind of gold-solder is called by medical men 'remedial solder,'^b and is not the same as orobitis.

XXIX The goldsmiths also use a special gold-solder of their own for soldering gold, and according to them it is from this that all the other substances with a similar green colour take the name. The mixture is made with Cyprian copper verdigris and the urine of a boy^c who has not reached puberty with the addition of soda^d, this is ground with a pestle

^d Sodium carbonate

PLINY NATURAL HISTORY

aere in cyprius mortarius, santheam vocant nostri
ita feruminatur aurum, quod argentosum vocant
signum est, si addita santhea nitescit e diverso
aerosum contrahit se hebetaturque et difficile
feruminatur ad id glutinum fit auro et septima
argenti parte ad supra dicta additis unaque tuitis

- 94 XXX Contexique par est reliqua circa hoc, ut
universa naturae contingat admiratio auro glutinum
est tale, argilla ferro, cadmea aeris massis,
alumen lamnis, resina plumbo et marmori, at plum-
bum nigrum albo iungitur ipsumque album sibi oleo,
item stagnum aeramentis, stagno argentum pineis
optume lignis aes ferrumque funditur, sed et Aegyptio
papyro, paleis aurum calx aqua accenditur et
Thiacius lapis, idem oleo restinguitur, ignis autem
acetum maxime et visco et ovo tercia minime flagrat,
carboni vis maior exusto iterumque flagranti

- 95 XXXI Ab his argenti metalla dicantur, quae
sequens insania est non nisi in puteis reperitur
nullaque spe sui nascitur, nullis, ut in auro, lucentibus

^a Here zinc oxide See also XXXIV 100

^b Tin

^c Or *stannum*, an alloy of silver and lead

^d Perhaps a kind of asphalt

made of Cyprian copper in mortars of the same metal, and the Latin name for the mixture is *santerna*. It is in this way used in soldering the gold called silvery-gold, a sign of its having been so treated is if the application of borax gives it brilliancy. On the other hand 'coppery' gold shrinks in size and becomes dull, and is difficult to solder, for this purpose a solder is made by adding some gold and one seventh as much silver to the materials above specified, and grinding them up together.

XXX While speaking of this it will be well to annex the remaining particulars, so as to occasion all-round admiration for Nature. The proper solder for gold is the one described, for iron, potter's clay, for copper in masses, *cadmea* ^a, for copper in sheets, alum, for lead and marble, resin. Black lead however is joined by means of white lead, ^b and white lead to white lead by using oil, stagnum ^c likewise with copper filings, and silver with stagnum. For smelting copper and iron pine-wood makes the best fuel, though Egyptian papyrus can also be used, gold is best smelted with a fire made of chaff. Water sets fire to quicklime and Thracian stone, ^d and olive-oil puts it out, fire however is most readily quenched by vinegar, mistletoe and eggs. Earth it is quite impossible to ignite, but charcoal gives a more powerful heat if it is burned till it goes out and then catches fire again.

XXXI After these details let us speak about the *Silver* varieties of silver ore, the next madness of mankind. Silver is only found in deep shafts, and raises no hopes of its existence by any signs, giving off no shining sparkles such as are seen in the case of gold.

PLINY NATURAL HISTORY

scintillis teria est alias iubra, alias¹ cineracea
 excoqui non potest, nisi cum plumbo nigro aut cum
 vena plumbi—galenam vocant—, quae iuxta argenti
 venas plerumque reperitur et eodem opere ignium
 discedit pars in plumbum, argentum autem innatat²
 superne, ut oleum aquis

- 96 Reperitur in omnibus paene provinciis, sed in
 Hispania pulcherrimum, id quoque in sterili solo atque
 etiam montibus, et ubicumque una inventa vena est
 non procul invenitur alia hoc quidem et in omni
 fere materia, unde metalla Graeci videntur divisse
 mirum, adhuc per Hispanias ab Hannibale inchoatos
 durare puteos sua nomina ab inventoribus habent,
 97 ex quis Baebelo appellatur hodie, qui ccc pondo
 Hannibali subministravit in dies, ad md passus iam
 cavato monte, per quod spatium aquatini³ stantes
 noctibus diebusque egerunt aquas lucernarum men-
 98 sura annemque faciunt argenti vena in summo
 reperta ciudaria appellatur finis antiquis fodiendi
 solebat esse alumen inventum, ultia nihil quaeire-
 batur nuper inventa aeris vena infra alumen nullam
 finem spei fecit odor ex argenti fodinis inimicus
 omnibus animalibus, sed maxime canibus aurum
 argentumque quo mollius, eo pulchrius lineas ex
 argento nigras praeduci plerique mirantur
 99 XXXII Est et lapis in iis venis, cuius vomica

¹ *VI* rufa alia

² natat *B*

³ aquatini *coni Sillig* Accitani *coni Hardourn* Iacetani
Pintianus aquitani

^a Still so called It is lead sulphide, the most useful lead
 ore For *galena* in a different sense, see XXXIV 159

^b Taking *μεταλλα* vs (*άλλα*) *μετ* *άλλα* 'one after another'

^c Possibly carbon dioxide, which, since it lies low, would
 affect dogs before men

The ore is sometimes red, sometimes ash-coloured. It cannot be smelted except when combined with lead or with the vein of lead, called galena,^a lead ore, which is usually found running near veins of silver ore. Also when submitted to the same process of firing, part of the ore precipitates as lead while the silver floats on the surface, like oil on water.

Silver is found in almost all the provinces, but the finest is in Spain, where it, as well as gold, occurs in sterile ground and even in the mountains, and wherever one vein is found another is afterwards found not far away. This indeed also occurs in the case of almost every metal, and accounts it seems for the word 'metals' used by the Greeks.^b It is a remarkable fact that the shafts initiated by Hannibal 221-210 B all over the Spanish provinces are still in existence, they are named from the persons who discovered them, one of these mines, now called after Baebelo, furnished Hannibal with 300 pounds weight of silver a day, the tunnelling having been carried a mile and a half into the mountain. Along the whole of this distance watermen are posted who all night and day in spells measured by lanterns bale out the water and make a stream. The vein of silver nearest the surface is called 'the raw'. In early days the excavations used to stop when they found alum, and no further search was made, but recently the discovery of a vein of copper under the alum has removed all limit to men's hopes. The exhalations^c from silver mines are dangerous to all animals, but specially to dogs. Gold and silver are more beautiful the softer they are. It surprises most people that silver traces black lines.

XXXII There is also a mineral found in these *Quicksilver*

PLINY NATURAL HISTORY

liquoris aeterni argentum vivum appellatur venenum rerum omnium est perumpitque vasa perimans tabe dira omnia ei innatant praeter aurum, id unum ad se trahit ideo et optime purgat, ceteras eius sordes expuens crebro iactatu fictilibus in vasis ita vitis¹ eiectis² ut et ipsum ab auro discedat, in pelles subactas effunditur, per quas sudoris vice
 100 defluens purum relinquit aurum ergo et cum aera inveniuntur, sublitum biatteis pertinacissime retinet, verum pallore detegit simplices aut praetenues biatneas quapropter id furtum quaeerentes ovi liquore candido usum eum adulterare, mox et hydrargyrum,³ de quo dicemus suo loco et alias argentum vivum non largum inventu est

101 XXXIII In isdem argenti metallis invenitur, ut proprie dicatur,⁴ spumae lapidis candidae nitentisque, non tamen tralucetis, stimuli appellant, alii stibi, alii alabastrum, aliqui larbasim⁵ duo eius genera, mas ac femina magis probant feminam, horridior

¹ *Vll* ita vitis, ita ut his (his), avitis ita autem his *Sillig* alutis *Broter* vestibus *Hardour*

² eiectis *Ian* tectis *B* *Vll* abiectis, iniectis, invectis

³ hydrargyrum *L Ponsinet de Sivry* hydrargyro

⁴ dicatur *Mayhoff* dicatus *B*¹ dictus *B*² dicemus *rell* (dicamus *cd Par* 6801)

⁵ larbasim *B* turbasim *rell* larbasim *Hermolaus Barbarus* coll *Dio.c* V 99

veins of silver which contains a humour, in round drops, that is always liquid, and is called quicksilver. It acts as a poison on everything, and breaks vessels by penetrating them with malignant corruption. All substances float on its surface except gold, which is the only thing that it attracts to itself, consequently it is also excellent for refining gold, as if it is briskly shaken in earthen vessels it rejects all the impurities contained in it. When these blemishes have been thus expelled, to separate the quicksilver itself from the gold it is poured out on to hides that have been well dressed, and exudes through them like a kind of perspiration and leaves the gold behind in a pure state. Consequently when also things made of copper are gilded, a coat of quicksilver is applied underneath the gold leaf and keeps it in its place with the greatest tenacity but if the gold-leaf is put on in one layer or is very thin it reveals the quicksilver by its pale colour. Consequently persons intending this fraud adulterated the quicksilver used for this purpose with white of egg, and later they falsified also hydrargyrum or artificial quicksilver, which we shall speak about in its proper place § 123. Otherwise quicksilver is not to be found in any large quantity.

XXXIII In the same mines as silver there is found *Antimony* what is properly to be described as a stone, made of white and shiny but not transparent flesh, several names are used for it, stimi, stibi, alabastrium and sometimes larbasis. It is of two kinds, male and female ^a. The female variety is preferred, the male

^a Probably stibnite (sulphide of antimony), and native metallic antimony respectively (K. C. Bailey, *The Elder Pliny's Chapters on Chemical Subjects*, I, p. 213).

PLINY NATURAL HISTORY

est mas scabriorque et minus ponderosus minusque
radians et harenosior, femina contra nitet, friabilis
fissurisque, non globis, dehiscens

- 102 XXXIV Vis eius adstringere ac refrigerare,
principalis autem circa oculos, namque ideo etiam
plerique platyophthalmos id appellaverunt, quoniam in
calhblephanis mulierum dilatet oculos, et fluctiones
inhibet oculorum exulcerationesque farina eius ac
tunis cummi admixto sistit et sanguinem e cerebro
profluentem, efficacissime¹ et contra recentia volnera
et contra veteres canum morsus inspersa farina et
contra ambusta igni cum adipe ac spuma argenti
103 cerussaque et cera uritur autem offis bubuli fimi
circumlitum in clibanis, dein restinguitur mulierum
lacte teriturque in mortario admixta aqua pluvia,
ac subinde turbidum transfunditur in aereum vas
emundatum nitro faex eius intellegitur plumbosis-
sima, quae subsedit in mortario, abiciturque² dein
vas, in quod turbida transfusa sint, opertum linteo
per noctem relinquitur et postero die quidquid
104 innatet effunditur spongeae tollitur quod ibi sub-
sedit, flos intellegitur ac linteo interposito in sole
siccatur, non ut periescat, iterumque in mortario
teritur et in pastillos dividitur ante omnia autem

¹ efficacissime *B* efficaci *rell* (efficacior *cl* *Par* 6801)

² abiciturque *Gelen* abigiturque *aut* abicitur

being more uneven and rougher to the touch, as well as lighter in weight, not so brilliant, and more gritty, the female on the contrary is bright and friable and splits in thin layers and not in globules.

XXXIV Antimony has astringent and cooling properties, but it is chiefly used for the eyes, since this is why even a majority of people have given it a Greek name meaning 'wide-eye,' because in beauty-washes for women's eyebrows it has the property of magnifying the eyes. Made into a powder with powdered frankincense and an admixture of gum it checks fluxes and ulcerations of the eyes. It also arrests discharge of blood from the brain, and is also extremely effective with a sprinkling of its powder against new wounds and old dog-bites and against burns if mixed with fat and litharge of silver, or lead acetate^a and wax. It is prepared by being smeared round with lumps of ox dung and burnt in ovens, and then cooled down with women's milk and mixed with rain water and pounded in mortars. And next the turbid part is poured off into a copper vessel after being purified with soda. The lees are recognized by being full of lead, and they settle to the bottom of the mortars and are thrown away. Then the vessel into which the turbid part was poured off is covered with a cloth and left for a night, and the next day anything floating on the surface is poured off or removed with a sponge. The sediment on the bottom is considered the choicest part and is covered with a linen cloth and put to dry in the sun but not allowed to become very dry, and is ground up a second time in the mortar and divided into small tablets. But it is above all essential to limit the amount of heat

PLINY NATURAL HISTORY

uendi modus necessarius est, ne plumbum fiat quidam non fimo utuntur coquentes, sed adipe alii tritum in aqua triplici linteo saccant¹ faecemque abiciunt idque, quod defluxit,² transfundunt, quidquid subsidat colligentes emplastris quoque et colluius miscent

- 105 XXXV Scoriā in argento Graeci vocant helcysma vis eius adstringere et refrigerare corpora, ac remedio est³ addita⁴ emplastris ut molybdaena, de qua dicemus in plumbo, cicatricibus maxime glutinandis, et contra tenesmos dysenteriasque infusa clysteribus cum myrteo oleo addunt et in medicamenta, quae vocant lyparias, ad excrescentia ulcerum aut ex attritu facta aut in capite manantia
- 106 Fit in isdem metallis et quae vocatur spuma argenti genera eius tria optima quam chrysitim vocant, sequens quam argyritim, tertia quam molybditim et plerumque omnes hi colores in isdem tubulis inveniuntur probatissima est Attica, proxima Hispaniensis chrysitis ex vena ipsa fit, argyritis ex argento, molybditis e plumbi ipsius⁵ fusura—quae
- 107 fit Puteolis—et inde habet nomen omnis autem fit excocta sua materia ex superiore catino defluens in inferiorem et ex eo sublata vericulis ferreis atque in

¹ V l siccant

- effluxit B

³ ac remedio est *Mayhoff* qui et acrisibus aut viridibus aut a Graecis conr hac de re *Detlefsen* quare his *J Muller* acre dies *B¹* hac re *B²* cm rell

⁴ addita *Mayhoff* additur

⁵ potius conr *Mayhoff*

^a Really into metallic antimony, mistaken for lead

^b *I e* debris scraped off

applied to it, so that it may not be turned into lead ^a Some people do not employ dung in boiling it but fat Others pound it in water and strain it through three thicknesses of linen cloth and throw away the dregs, and pour off the liquor that comes through, collecting all the deposit at the bottom, and this they use as an ingredient in plasters and eye-washes

XXXV The slag in silver is called by the Greeks *Slag of silver* the 'draw-off' ^b It has an astringent and cooling effect on the body, and like sulphuret of lead, of ^{XXXIV} which we shall speak in dealing with lead, it has ^{173 sqd} healing properties as an ingredient in plasters, being extremely effective in causing wounds to close-up, and when injected by means of syringes, together with myrtle-oil, as a remedy for straining of the bowels and dysentery It is also used as an ingredient in the remedies called emollient plasters used for proud flesh of gathering sores, or sores caused by chafing or running ulcers on the head

The same mines also produce the mineral called *Litharge* scum ^c of silver Of this there are three kinds, with Greek names meaning respectively golden, silvery and leaden, and for the most part all these colours are found in the same ingots The Attic kind is the most approved, next the Spanish The golden scum is obtained from the actual vein, the silvery from silver, and the leaden from smelting the actual lead, which is done at Pozzuoli, from which place it takes its name ^d Each kind however is made by heating its raw material till it melts, when it flows down from an upper vessel into a lower one and is lifted out of that with small iron spits and then twisted round on

^c Litharge, lead monoxide

^d Argyrilis Puteolana

PLINY NATURAL HISTORY

- ipsa flamma convoluta vericulo, ut sit modici ponderis est autem, ut ex nomine intellegi potest, ferrescentis et futinae¹ materiae spuma distat et scoria quo potest spuma a faece distare alterum, purgantis se materiae, alterum purgatae vitium est
- 108 quidam duo genera faciunt spumae, quae vocant sciretytida² et peumenen,³ tertium molybdaenam in plumbo dicendam spuma, ut sit utilis, iterum coquitui confractis tubulis ad magnitudinem anulorum⁴ ita accensa foliis ad separandos carbones cineremque abluitur aceto aut vino simulque iestingitur quodsi sit argyritis, ut candor ei detur, magnitudine fabae confecta in fictili coqui iubetur ex aqua addito in linteolis tritico et hordeo novis, donec
- 109 ea purgentur postea vi diebus terunt in mortario, ter die abluentes aqua frigida et, cum desinant,⁵ calida, addito sale fossili in libram spumae obolo novissimo die dein condunt in plumbeo vase alii cum faba candida et tisana cocunt siccantque sole, alii in lana candida cum faba, donec lanam non denigret tunc salem fossilem adiciunt subinde aqua mutata siccantque diebus xl calidissimis aestatis nec non in ventre suillo in aqua coquunt exemptamque

¹ et futinae B² e fusura con Mayhoff del Hardoun

² sciretytida B varia rell lythrida Brotier sclereitytida Detlefsen

³ reumenen Detlefsen

⁴ avellanarum Caesarius coll Diosc V 102 nucularum con Ian

⁵ desinant cd Par 6801 desinat rell dies desinat Mayhoff denigrare desinat C F W Muller

a spit in the actual flame, in order to make it of moderate weight. Really, as may be inferred from its name, it is the scum of a substance in a state of fusion and in process of production. It differs from dross in the way in which the scum of a liquid may differ from the lees, one being a blemish excited by the material when purifying itself and the other a blemish in the metal when purified. Some people make two classes of scum of silver which they call *scneytis* and *peumene*, and a third, leaden scum,^a which we shall speak of under the head of XXXIV
173
Lead
sulphide lead. To make the scum available for use it is boiled a second time after the ingots have been broken up into pieces the size of finger-rings. Thus after being heated up with the bellows to separate the cinders and ashes from it it is washed with vinegar or wine, and cooled down in the process. In the case of the silvery kind, in order to give it brilliance the instructions are to break it into pieces the size of a bean and boil it in water in an earthenware pot with the addition of wheat and barley wrapped in new linen cloths, until the silvery scum is cleaned of impurities. Afterwards they grind it in mortars for six days, three times daily washing it with cold water and, when they have ceased operations, with hot, and adding salt from a salt-mine, an obol weight to a pound of scum. Then on the last day they store it in a lead vessel. Some boil it with white beans and pearl-barley and dry it in the sun, and others boil it with beans in a white woollen cloth till it ceases to discolour the wool, and then they add salt from a salt-mine, changing the water from time to time, and put it out to dry on the 40 hottest days of summer. They also boil it in a sow's

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nitro fiant et ut supra terunt in mortariis cum ole
sunt qui non coquant, sed cum sale terant et adiecta
110 aqua abluant usus eius ad collyria et cuti¹ mulie-
rum cicatricum foeditates tollendas maculasque,
abluendum² capillum vis autem siccae, mollie,
refrigerare, temperate purgare, explere ulcera,
tumores lenire, talibusque³ emplastris additui et
liparis supra dictis ignes etiam sacros tollit cum ruta
myrtisque et aceto, item perimones cum myrtis et
cera⁴

111 XXXVI In argentariis metallis invenitur minium
quoque, et nunc inter pigmenta magnae auctoritatis
et quondam apud Romanos non solum maximae, sed
etiam sacrae enumerat auctores Verrius, quibus
credere necesse sit Iovis ipsius simulacri faciem diebus
festis minio inlini solitam triumphantiumque corpora,
112 sic Camillum triumphasse, hac religione etiamnum
addi in unguenta cenae triumphalis et a censoribus
in primis Iovem miniandum locari cuius rei causam
equidem minor, quamquam et hodie id expeti constat
Aethiopum populis totosque eo tingui procures, hunc

¹ cuti *Mayhoff* (qui et cutem con-) litum *B*¹ situm *B*^o
varia rell

² *VI* et (aut et ad) abluendum ad alendum *Ian*

³ albisque *Frohner*

⁴ cera *edd vett* cetera

^a Sulphide of mercury ('cinnabar') is meant here True red lead was properly called *minium secundarium* See § 119

paunch in water, and when they take it out rub it with soda, and grind it in mortars with salt as above. In some cases people do not boil it but grind it up with salt and then add water and rinse it. It is used to make an eye-wash and for women's skins to remove ugly scars and spots and as a hair-wash. Its effect is to dry, to soften, to cool, to act as a gentle purge, to fill up cavities caused by ulcers, and to soften tumours, it is used as an ingredient in plasters serving these purposes, and for the emollient plasters mentioned above. Mixed with § 109 rue and myrtle and vinegar, it also removes erysipelas, and likewise chilblains if mixed with myrtle and wax.

XXXVI *Minium* or cinnabar^a also is found in *Cinnabar* silver mines, it is of great importance among pigments at the present day, and also in old times it not only had the highest importance but even sacred associations among the Romans. Verrius gives a list of writers of unquestionable authority who say that on holidays it was the custom for the face of the statue of Jupiter himself to be coloured with cinnabar as well as the bodies of persons going in a triumphal procession, and that Camillus was so coloured in his triumph, and that under the same ritual it was usual even in their day for cinnabar to be added to the unguents used at a banquet in honour of a triumph, and that one of the first duties of the Censors was to place a contract for painting Jupiter with cinnabar. For my own part I am quite at a loss to explain the origin of this custom, although at the present day the pigment in question is known to be in demand among the nations of Ethiopia whose chiefs colour themselves all over with it, and

PLINY NATURAL HISTORY

ibi deorum simulacris colorem esse quapropter diligentius persequemur omnia de eo

- 113 XXXVII Theophrastus LXXX annis ante Praxibulum Atheniensium magistratum—quod tempus exit in urbis nostrae CCCXLVIII¹ annum—tradit inventum minium a Callia Atheniense initio sperante aurum excoqui posse harenæ rubenti in metallis argenti, hanc fuisse originem eius, reperiri autem
- 114 iam tum² in Hispania, sed durum et harenosum, item apud Colchos in iupe quadam inaccessa, ex qua iaculantes decuterent, id esse adulterum, optimum vero supra Ephesum Cilbianis agnis harena cocci colorem habente, hanc teri, dein lavari farinam et quod subsidat iterum lavari, differentiam artis esse, quod alii minium faciant prima lotura, apud alios id esse dilutius, sequentis autem loturae optimum
- 115 XXXVIII Auctoritatem colori fuisse non minoriam enim Troianis temporibus rubrica in honore erat Homero teste, qui naves ea commendat, alias circa pigmenta picturasque rarus milton vocant Graeci
- 116 miniumque cinnabaium unde natus error Indicae³ cinnabaris nomine⁴ sic enim appellant illi saniem draconis elisi elephantorum morientium pondere

¹ CCCXLVIII *Hermolaus Barbarus* CCCXXVIII *Casaubon* CCXLVIII

² nativum *coni Hardoun*

³ Indicae *K C Bailey* indicio *B* indico *rell*

⁴ cinnabaris nomine *cd Par* 6801 *nominum (om cinnabaris) B* nomine (*om cinnabaris*) *rell* *insecitia nominum Mayhoff*

^a *De Lap* 59, 58

^b 315 B C

^c This was really an exudation (still called 'dragon's blood') from species of the oriental plant *Dracaena* or *Pterocarpus*

with whom the statues of the gods are of that colour. On that account we will investigate all the facts concerning it more carefully.

XXXVII Theophrastus^a states that cinnabar was discovered by an Athenian named Callias, 90 years before the archonship^b of Praxibulus at 405 B C Athens—this date works out at the 349th year of our city, and that Callias was hoping that gold could by firing be extracted from the red sand found in silver mines, and that this was the origin of cinnabar, although cinnabar was being found even at that time in Spain, but a hard and sandy kind, and likewise in the country of the Colchi on a certain inaccessible rock from which the natives dislodged it by shooting javelins, but that this is cinnabar of an impure quality whereas the best is found in the Cilician territory beyond Ephesus, where the sand is of the scarlet colour of the kermes-insect, and that this is ground up and then the powder is washed and the sediment that sinks to the bottom is washed again, and that there is a difference of skill, some people producing cinnabar at the first washing while with others this is rather weak and the product of the second washing is the best.

XXXVIII I am not surprised that the colour had an important rank, for as far back as Trojan times II II 63 red ochre was highly valued, as evidenced by Homer, who speaks of it as a distinguished colour for ships, although otherwise he rarely alludes to colours and paintings. The Greek name for it is 'miltos,' and they call *minium* 'cinnabar.' This gave rise to a mistake owing to the name 'Indian cinnabar,' for that is the name the Greeks give to the gore^c of a snake crushed by the weight of dying elephants,

perimto utriusque animalis sanguine, ut diximus, neque est alius colos, qui in pictura proprie sanguinem reddat illa cinnabaris antidotis medicamentisque utilissima est et, Hercules, medici, quia cinnabarum vocant, utuntur hoc minio, quod¹ venenum esse paulo mox docebimus

117 XXXIX Cinnabarum veteres quae etiam nunc vocant monochiomata pingebant pinxerunt et Ephesio minio, quod derelictum est, quia curatio magni operis erat praeterea utrumque nimis acie existimabatur ideo transiere ad iubicam et Sinopidem, de quibus suis locis dicam cinnabaris adulteratum sanguine caprina aut sorbis tinctis pretium sinceriae nummi L

118 XL Iuba minium nasci et in Carmania tradit, Timagenes² et in Aethiopia, sed neutro ex loco invehitum ad nos nec fere aliunde quam ex Hispania, celeberrimo Sisaponensi regione in Baetica minium metallo vectigalibus populi Romani, nullus rei diligentiore custodia non licet ibi perficere id excoquique³, Romam adfertur⁴ vena signata, ad bina milia fere pondo annua, Romae autem lavatum, in vendendo pretio statuta⁵ lege, ne modum excederet HS LXX in libras sed adulteratur multis modis, unde

119 praeda societati namque est alterum genus omni-

¹ cinnabarum minium v, u h quod con Warmington

² Timaeus con Pinianus

³ excoquique cdd (excoqui quae B excoctique cl Leul
l oss) excoctaque con Mayhoff

⁴ l ll refertur, deferitur, deferuntur perferuntur ell vell

⁵ l l statuto

when the blood of each animal gets mixed together, as we have said, and there is no other colour that properly represents blood in a picture. That kind of cinnabar is extremely useful for antidotes and medicaments. But our doctors, I swear, because they give the name of cinnabar to *minium* also, employ this *minium*, which as we shall soon show is a poison. VIII 34
§ 124

XXXIX In old times 'dragon's-blood' cinnabar was used for painting the pictures that are still called monochromes, 'in one colour'. Cinnabar from Ephesus was also used for painting, but this has been given up because pictures in that colour were a great amount of trouble to preserve. Moreover both colours were thought excessively harsh, consequently painters have gone over to red-ochre and Sinopic ochre, pigments about which I shall speak in the proper places. Cinnabar is adulterated with goat's blood or with crushed service-berries. The price of genuine cinnabar is 50 sesterces a pound. LXXV
50 sqq

XL Juba reports that cinnabar is also produced in Carmania, and Timagenes says it is found in Ethiopia as well, but from neither place is it exported to us, and from hardly any other either except from Spain, the most famous cinnabar mine for the revenues of the Roman nation being that of Almaden in the Baetic region, no item being more carefully safeguarded. It is not allowed to smelt and refine the ore upon the spot, but as much as about 2000 lbs per annum is delivered to Rome in the crude state under seal, and is purified at Rome, the price in selling it being fixed by law established at 70 sesterces a pound, to prevent its going beyond limit. But it is adulterated in many ways, which is a source of plunder for the company. For there is in fact Red lead
cinnabar

PLINY NATURAL HISTORY

bus fere argentarius itemque plumbarius metallis,
 quod fit exusto lapide veris permixto, non ex illo,
 cuius vomicam argentum vivum appellavimus—is
 enim et ipse in argentum <vivum>¹ excoquitur—, sed
 ex aliis simul repositis steriles etiam plumbi de-
 prehenduntur² solo colore nec nisi in fornacibus
 rubescentes exustique tunduntur in farinam hoc
 est secundarium minium perquam paucis notum,
 120 multum infra naturales illas harenas hoc ergo
 adulteratum minium in officinis sociorum, et vilius³
 Syrico quonam modo Syricum fit suo loco doce-
 bimur, sublimi autem Syrico minium compendi ratio
 demonstrat et alio modo pingentium furto oppor-
 tunum est, plenos subinde abluentium penicillos
 121 sedit autem in aqua constatque furantibus sinccio
 cocci inter esse debet, secundarii autem splendor in
 parietibus sentit⁴ robiginem,⁵ quamquam hoc io-
 bigo quaedam metalli est Sisaponensibus autem
 mimariis sua vena harenae sine argento excoquitur
 auri modo, probatur auro candente, fucatum enim

¹ vivum *adl K C Barley*

² de micae prehenduntur *B*¹ micae deprehenduntur *B*^o
 deprehenduntur

³ et vilius *Mayhoff* et ubivis *Ian* et vivis *B* item *rell*

⁴ *Vl* sentire

⁵ robiginem *K C Barley* plumbaginem *Mayhoff* uliginem
Caesarius imaginem

^a Probably the true red lead (prepared from cerusite,
 natural lead carbonate)

^b Of sulphide of mercury See § 111, note, § 118

^c This is not true

another kind ^a of *minium*, found in almost all silver-mines, and likewise lead-mines, which is made by smelting a stone that has veins of metal running through it, and not obtained from the stone the round drops of which we have designated quick- § 99 silver—for that stone also if fired yields quicksilver—but from other stones found at the same time. These have no quicksilver and are detected only by their leaden colour, and only when they turn red in the furnaces, and after being thoroughly smelted they are pulverized by hammering. This gives a *minium* of second rate quality, which is known to very few people, and is much inferior to the natural sands we have mentioned. It is this then that is used for adulterating real *minium* in the factories of the company, but a cheaper kind is adulterated with Syrian. The preparation of the latter will be described in the proper place, but the process of giving cinnabar and red-lead a treatment of Syrian is detected by calculation when the one is weighed against the other. Cinnabar also, with red-lead, affords an opportunity for pilfering by painters in another way, if they wash out their brushes immediately when full of paint, the cinnabar or the red-lead settles at the bottom of the water and stays there for the pilferers. Pure cinnabar ought to have the brilliant colour of the scarlet kermes-insect, while the shine of that of the second quality when used on wall-paintings is affected by rust, although this is itself a sort of metallic rust. In the cinnabar mines ^b of Almaden the vein of sand is pure, without silver. It is melted like gold ^c, it is assayed by means of gold made red hot, as if it has been adulterated it turns black, but if genuine

PLINY NATURAL HISTORY

- nigrescit, sincerum retinet colorem invenio et calce adulterari, ac simili ratione ferri candentis lamina, si
 122 non sit aurum, deprehendi inlito solis atque lunae contactus inimicus remedium, ut pariete siccato ceria Pumica cum oleo liquefacta candens saetis inducatur iterumque admotis gallae carbonibus inuitur ad sudorem usque, postea candelis subigatur ac deinde linteis puris, sicut et marmora nitescent qui minimum in officinis poliunt, faciem laxis vesicis inligant, ne in respirando perniciosam pulverem trahant et tamen super¹ illas spectent minimum in voluminum quoque scriptura usurpatur clauioresque litteras vel in muro² vel in marmore, etiam in sepulchris, facit
- 123 XLI Ex secundario invenit vita et hydragryum in vicem argenti vivi, paulo ante dilatum fit autem duobus modis aereis mortariis pistillisque trito minio ex aceto aut patinis fictilibus impositum ferrea concha, calice coopertum, argilla superinlita, dein sub patinis accenso³ foliis continuis igni atque ita calici⁴ sudore deteriso, qui fit argenti colore et aquae liquore idem guttis dividi facilis et lubrico umore

¹ super *Mayhoff coll Diosc V 109* ut per *cld*

² muro *Deilefsen* aere *Hubner* auro *cld*

³ accenso *quidam ap Dalecamp* accensum

⁴ l calicis

^a This seems to be the meaning here, *secundario* would not refer to the minimum of the second quality (see above, § 111, note, § 119), for hydragryum was made from the sulphide of mercury of § 111

it keeps its colour. I find that it is also adulterated with lime, and this can be detected in a similar way with a sheet of red-hot iron if there is no gold available. A surface painted with cinnabar is damaged by the action of sunlight and moonlight. The way to prevent this is to let the wall dry and then to coat it with Punic wax melted with olive oil and applied by means of brushes of bristles while it is still hot, and then this wax coating must be again heated by bringing near to it burning charcoal made of plant-galls, till it exudes drops of perspiration, and afterwards smoothed down with waxed rollers and then with clean linen cloths, in the way in which marble is given a shine. Persons polishing cinnabar in workshops tie on their face loose masks of bladder-skin, to prevent their inhaling the dust in breathing, which is very pernicious, and nevertheless to allow them to see over the bladders. Cinnabar is also used in writing books, and it makes a brighter lettering for inscriptions on a wall or on marble even in tombs.

XLI Of secondary importance ^a is the fact that experience has also discovered a way of getting hydragrum or artificial quicksilver as a substitute for real quicksilver, we postponed the description of this a little previously. It is made in two ways, §§ 64, by pounding red-lead in vinegar with a copper pestle in a copper mortar, or it is put in an iron shell in flat earthenware pans, and covered with a convex lid smeared on with clay, and then a fire is lit under the pans and kept constantly burning by means of bellows, and so the surface moisture (with the colour of silver and the fluidity of water) which forms on the lid is wiped off it. This moisture is also easily divided into drops and rains down freely with shppery

PLINY NATURAL HISTORY

- 124 compluere¹ quod cum venenum esse conveniat, omnia, quae de minio in medicinae usu traduntur, temeraria arbitror, praeterquam fortassis inlito capiti ventrivi sanguinem sisti, dum ne qua penetret in viscera ac vulnus attingat aliter utendum non equidem censeam
- 125 XLII Hydiargyro argentum inauratur solum nunc prope, cum et in aerea simili modo duci debeat sed eadem fraus, quae in omni parte vitae ingeniosissima est, viliores excogitavit materias, ut docuimus
- 126 XLIII Auri argentique mentionem comitatu lapidis, quem coticulam appellant, quondam non solitus inveniri nisi in flumine Tmolo, ut auctor est Theophrastus, nunc vero passim alii Heraculum, alii Lydium vocant sunt autem modici, quateinas uncias longitudinis binasque latitudinis non excedentes quod a sole fuit in us, melius quam quod a terra his coticulis periti cum e vena ut lima rapuerunt experimento ramentum,² protinus dicunt quantum auri sit in ea, quantum argenti vel aeris, scripulari differentia, mirabili ratione non fallente
- 127 XLIV Argenti duae differentiae vatillis ferreis candentibus ramento inposito, quod candidum per-

¹ compluere *B* confluere *rell*

² experimento ramentum *L C Purser* experimentum

^a Both kinds of minium—the sulphide of mercury and the lead carbonate—are poisonous

fluidity And as cinnabar and red-lead^a are admitted to be poisons, all the current instructions on the subject of its employment for medicinal purposes are in my opinion decidedly risky, except perhaps that its application to the head or stomach arrests hæmorrhage, provided that it does not find access to the vital organs or come in contact with a lesion In any other way for my own part I would not recommend its employment

XLII At the present time silver is almost the only substance that is gilded with artificial quicksilver, though really a similar method ought to be used in coating copper But the same fraudulence which is so extremely ingenious in every department of life has devised an inferior material, as we have § 100 shown

XLIII With the mention of gold and silver goes a description of the stone called the touch stone, formerly according to Theophrastus^b not usually found anywhere but in the river Tmolus, but now found in various places Some people call it Heracian stone and others Lydian The pieces are of a moderate size, not exceeding four inches in length and two in breadth The part of these pieces that has been exposed to the sun is better than the part on the ground When experts using this touchstone, like a file, have taken with it a scraping from an ore, they can say at once how much gold it contains and how much silver or copper, to a difference of a scruple, their marvellous calculation not leading them astray

XLIV There are two points in which silver shows a variation A shaving that remains perfectly white when placed on white-hot non shovels is passed

PLINY NATURAL HISTORY

maneat, probatum proxima bonitas iusto, nulla nigro
sed experimento quoque fias intervenit servatis
in urina vinorum vatillis inficitur ita iamentum obitei
dum unitu. candoremque mentitur est aliquod
experimentum politi et in habitu hominis, si sudet
protinus nubemque discutiat

- 128 XLV Lamnas duci,¹ speciem² fieri³ non nisi ex
optimo posse creditum⁴ fuerit id integrum, sed id
quoque iam fiau de corumpitur

- Fst⁵ natura mira imagines reddendi, quod reper-
cusso aere itque in oculos regesto fieri convenit
eadem vi sic⁶ in speculi usu polita crassitudine plu-
lumque propulsa dilatatur in immensum magnitudo
imaginum tantum interest, repercussum illum ex-
129 cipiat an respuat quin etiam pocula ita figurantur
expulsis⁷ intus crebris ceu speculis ut vel uno intuyente
totidem populus imaginum fiat excogitantur et
monstrifica, ut in templo Zyminae dicata id evenit
figura materiae pluumum refert concava sint et
poculi modo an palmarum Thucidicae, media depressa
an elata, transversa an obliqua, supina an infesta,

¹ duci et *cd Par Lat 6801* duci *rell* duci in *Mayhoff*

² speciem *B* specula *rell*

³ fieri *cd* vitri *Mayhoff*

⁴ credimus *B*

⁵ est *Mayhoff* sed

⁶ vi sic *Mayhoff* vis *Sillig* vis *B* vi *cd Par 6801*
nisi *rell*

⁷ l l exculptis

^a When it is concave

^b When it is convex or plane

^c I.e. the major axis of an oval mirror, or of a convex or
concave oval centre of a special kind of mirror

as good, while if it turns red it is of the next quality, and if black it has no value at all. But fraud has found its way even into this test, if the shovels are kept in men's urine the silver shaving is stained by it during the process of being burnt, and counterfeits whiteness. There is also one way of testing polished silver in a man's breath—if it at once forms surface moisture and dissipates the vapour.

XLV It has been believed that only the best silver is capable of being beaten out into plates and producing an image. This was formerly a sound test, but nowadays this too is spoiled by fraud.

*Reflecting
qualities a
uses of
silver
Mirrors*

Still, the property of reflecting images is marvellous, it is generally agreed that it takes place owing to the repercussion of the air which is thrown back into the eyes. In a similar way, owing to the same force, in employing a mirror if the thickness of the metal has been polished and beaten out into a slightly concave shape the size of the objects reflected is enormously magnified. Such a difference does it make whether the surface welcomes ^a the air in question or flings it back ^b. Moreover bowls can be made of such a shape, with a number of looking-glasses so to speak beaten outward inside them, that if only a single person is looking into them a crowd of images is formed of the same number as the facets in question. Ingenuity even devises vessels that do conjuring tricks, for instance those deposited as votive offerings in the temple at Smyrna. This is brought about by the shape of the material, and it makes a very great difference whether the vessels are concave and shaped like a bowl or convex like a Thracian shield, whether their centre is recessed or projecting, whether the oval ^c is horizontal or oblique,

PLINY NATURAL HISTORY

- qualitate excipientis figurae torquente venientes um-
 130 bras, neque enim est aliud illa imago quam digesta
 claritate materiae accipientis umbra¹ atque ut
 omnia de speculis peragantur in hoc loco, optima reput
 maiores fuerant Brundisina, stagno et aere mixtis
 praelata sunt argentea, primus fecit Pasiteles Magni
 Pompei aetate nuper credi coeptum certiore
 imaginem reddi auro opposito vitris²
 131 XLVI Tinguunt Aegyptus argentum, ut in vasis
 Anubim suum spectet, pingitque, non caelat, argen-
 tum unde transit materia et ad triumphales
 statuas, munusque, crescit pretium fulgoris exae-
 cati id autem fit hoc modo, miscentur argento
 tertiae aeris Cypru tenuissimi, quod coronarium
 vocant, et sulphuris vivi quantum argenti, conflantur
 ita in fictili circumlito argilla, modus coquendi,
 donec se ipsa opercula aperiant nigrescit et ovi
 induati luteo, ut tamen aceto et cetera deterantur
 132 Miscuit denario triumphator Antonius ferrum, miscent
 aera falsae monetae,³ alii et⁴ ponderi⁵ subtrahunt,
 cum sit iustum LXXXIII e libris signari igitur ais

¹ umbra *Ian* umbram

² vitris *K C Bailey* vitris aversis *con* *D'Arcy Thompson*
 aversis

³ *Vl* falsa moneta

⁴ alii et *Mayhoff* alii e *cd* *Par* 6801 alia aut aliae aut
 alii (*om* et) *rell*

⁵ ponderi *Urlichs* pondere aut ponderae aut pondera
 alii de pondere *con* *Mayhoff*

^a Cf § 94 and note

^b vitris is *K C Bailey's* conjecture The sentence cannot
 refer to *silver* mirrors Roman glass mirrors, backed usually
 with lead, have been found, but seem to belong to a later time
 than Pliny

^c This was employed to make imitation gold crowns for use
 on the stage

laid flat or placed upright, as the quality of the shape receiving the shadows twists them as they come for in fact the image in a mirror is merely the shadow arranged by the brilliance of the material receiving it And in order to complete the whole subject of mirrors in this place, the best of those known in old days were those made at Brindisi of a mixture of stagnum ^a and copper Silver mirrors have come to be preferred, they were first made by Pasiteles in the period of Pompey the Great But it has recently come to be believed that a more reliable reflection is given by applying a layer of gold to the back of glass ^b

XLVI The people of Egypt stain their silver so as to see portraits of their god Anubis in their vessels, and they do not engrave but paint their silver The use of that material thence passed over even to our triumphal statues, and, wonderful to relate, its price rises with the dimming of its brilliance The method adopted is as follows with the silver is mixed one third its amount of the very fine Cyprus copper called chaplet-copper ^c and the same amount of live sulphur as of silver, and then they are melted in an earthenware vessel smeared round with potter's clay, the heating goes on till the lids of the vessels open of their own accord Silver is also turned black by means of the yolk of a hard-boiled egg, although the black can be rubbed off with vinegar and chalk

The triumvir Antony alloyed the silver denarius with iron, and forgers put an alloy of copper in silver coins, while others also reduce the weight, the proper coinage being 84 denarii from a pound of silver Consequently a method was devised of

*Debased and
forged silver
coinage*

PLINY NATURAL HISTORY

facta denarios probare, tam iucunda plebei lege, ut
 Mario Gratidiano vicatur¹ tota¹ statuas dicaverit
 munumque, in hac artium sola vitia discuntur et falsi
 denari spectatur exempli pluribusque veris denarius
 adulterinus emitur

- 133 XLVII Non erat apud antiquos numerus ultra
 centum milia, itaque et hodie multiplicanti haec,
 ut decies centena aut saepius dicantur faenus hoc
 fecit nummusque percussus, et sic quoque aes alienum
 etiamnum appellatur postea Divites cognominati,
 dummodo notum sit eum, qui primus hoc cognomen
 134 acceperit, decoxisse creditoribus suis ex eadem
 gente M Crassus negabat locupletem esse nisi qui
 redditu annuo legionem tueri posset in agris HS
 [MM] possedit Quiritium post Sullam divitissimus, nec
 fuit satis nisi totum Parthorum usurpasset animum,
 atque ut memoriam quidem opum occupaverit—
 iuvat enim insectari inexplabilem istam habendi
 cupidinem— multos postea cognovimus servitute
 liberatos opulentiores, pariterque tres Claudii prin-
 cipatu paulo ante Callistum, Pallantem, Narcissum
 135 atque ut hi omittantur, tamquam adhuc ierum

¹ totas B, *cd* Par 6801

^a Crassus the so called 'triumvir' was defeated by the Parthians at Carrhae (Haran) in 53 B.C., and assassinated when treating for peace. His head was cut off and sent to the Parthian king, who caused melted gold to be poured into its mouth, saying 'Sate thyself now with the metal for which when alive thou wert so greedy' (Dio Cassius XL 27)

assaying the denarius, under a law that was so popular that the common people unanimously distinct by distinct voted statues to Marius ^{Before 8} Gratidianus ^{B C} And it is a remarkable thing that in this alone among arts spurious methods are objects of study, and a sample of a forged denarius is carefully examined and the adulterated coin is bought for more than genuine ones

XLVII In old days there was no number standing ^{Example} for more than 100,000, and accordingly even to-day ^{private a} we reckon by multiples of that number, using the ^{public} expression times 'ten times one hundred thousand' ^{wealth} or larger multiples This was due to usury and to the introduction of coined money, and also on the same lines we still speak of money owed as 'somebody else's copper' Afterwards 'Dives,' 'Rich,' became a family surname, though it must be stated that the man who first received this name ran through his creditors' money and went bankrupt Afterwards Marcus Crassus, who was a member of the Rich family, used to say that nobody was a wealthy man except one who could maintain a legion of troops on his yearly income He owned landed property worth two hundred million sesterces, being the richest Roman citizen after Sulla Nor was he satisfied without getting possession of the whole of the Parthians' gold ^a as well, and although it is true he was the first to win lasting reputation for wealth—it is a pleasant task to stigmatize insatiable covetousness of that sort—we have known subsequently of many liberated slaves who have been wealthier, and three at the same time not long before our own days in the period of the emperor Claudius, namely Callistus, ^{A D 41-5} Pallas and Narcissus And to omit these persons,

PLINY NATURAL HISTORY

- potiantur, C Asinio Gallo C Marcio Censorino cos
 a d vi Kal Febr C Caecilius C l Isidorus testa-
 mento suo edixit, quamvis multa bello civili perdidis-
 set, tamen relinquere servorum ¹ IIII CXXVI, iuga boum
 III DC, reliqui pecoris CCLVII, in numerato HS [DC],
 136 funerari se iussit HS [XI] ² congeriant excedentes
 numerum opes, quota tamen portio erunt Ptolemiei,
 quem Varro tradit Pompeio res gerente circa Iudae-
 am octona milia equitum sua pecunia toleravisse,
 mille convivas totidem aureis potioris, mutantem
 ea vasa cum ferculis, saginasse ¹ quota vero ille ipse
 137 —neque enim de regibus loquor—portio fuerit
 Pythis Bithyni, qui platanum auream vitemque
 nobiles illas Dario regi donavit, Xei vis copias, hoc est
 [VII] LXXXVIII ³ hominum, excepit epulo, stipendium
 quinque mensum frumentumque pollicitus, ut e
 quinque liberis in dilectu senectuti suae unus saltem
 concederetur ¹ hunc quoque ipsum aliquis comparet
 Creso regi ¹ quae, malum, amentia est id in vita
 cupere, quod aut et servis contigerit aut ne in regibus
 quidem inveniunt finem ¹
 138 XLVIII Populus R stipem spargere coepit Sp
 Postumio Q Marcio cos, tanta abundantia pecuniae
 erat, ut eam conferret L Scipioni, ex qua is ludos

¹ se servorum *coni Mayhoff*

² [XII] *Ian*, [X] *Detlefsen* XI milibus *cd Par* 6801 XI
rell (IVI B)

³ [VII] *Ian* LXXXVIII *Sillig varia cdd*

^a *I* e still alive and ruling the Empire, so that it would be dangerous to speak of them

^b Probably Auletes, King of Egypt 80–51 B C

^c See Herodotus VII 27, 38

as if they were still in sovereign power,^a there is Gaius Caecilius Isidorus, the freedman of Gaius Caecilius who in the consulship of Gaius Asinius ^{8 B C} Gallus and Gaius Marcius Censorinus executed a will dated January 27 in which he declared that in spite of heavy losses in the civil war he nevertheless left 4116 slaves, 3600 pairs of oxen, 257,000 head of other cattle, and 60 million sesterces in cash, and he gave instructions for 1,100,000 to be spent on his funeral. But let them amass uncountable riches, yet what fraction will they be of the riches of the Ptolemy^b who is recorded by Varro, at the time when Pompey was campaigning in the regions ^{63 B C} adjoining Judaea, to have maintained 8000 horse at his own charges, to have given a lavish feast to a thousand guests, with 1,000 gold goblets, which were changed at every course, and then what fraction would his own estate have been (for I am not speaking about kings) of that of the Bithynian Pythes,^c who presented the famous gold plane tree and vine to King Darius, and gave a banquet to the forces of Xerxes, ^{480 B C} that is 788,000 men, with a promise of five months' pay and corn on condition that one at least of his five children when drawn for service should be left to cheer his old age? Also let anyone compare even Pythes himself with King Croesus! What madness it is (damn it all!), to covet a thing in our lifetime that has either fallen to the lot even of slaves or has reached no limit even in the desires of Kings!

XLVIII The Roman nation began lavishing donations in the consulship of Spurius Postumius ^{186 B C} and Quintus Marcius so abundant was money at that date that they contributed funds for Lucius Scipio to defray the cost of games which he cele-

PLINY NATURAL HISTORY

fecit nam quod Agrippae Menenio sextantes aeris
 in funus contulit, hono^ris id necessitatisque propter
 paupertatem Agrippae, non largitionis esse duxerim ¹

- 139 XLIX Vasa ex argento mire inconstantia humani
 ingenu variat nullum genus officinae diu probando
 nunc Furmana,² nunc Clodiana, nunc Gratiana—
 etenim tabernas mensis adoptamus—, nunc ana-
 glypta asperitatemque exciso ³ circa linarum picturis
 140 quaeuimus, iam vero et mensas repositorius inponi-
 mus ad sustinenda opsonia, interrاديمus alia, ut
 quam plurimum lima perdidit vasa coquinae ex
 argento fieri Calvus orator quinitat, at nos carucas
 argento caelare invenimus, nostraque aetate Poppaea
 coniunx Neronis principis soleas delicatioribus iu-
 mentis suis ex auro quoque induere iussit

- 141 L Triginta duo libras argenti Africanus sequens
 heredi reliquit idemque, cum de Poenis triumpharet,
 𐌛𐌚𐌚 cclxx pondo transtulit hoc argenti tota Cai-
 thago habuit illa terrarum aemula, quot mensarum
 postea apparatu victa¹ Numantia quidem deleta
 idem Africanus in triumpho militibus X vii dedit o

¹ *Pl* duxerim

² *Pl* Furmana

³ *Pl* excisa

^a In performance of a vow that he made in the war with Antiochus III, King of Syria, victoriously concluded in 190 B C

^b These various kinds of plate are named after the silver smiths who introduced them For the last cf Martial IV 39 Argenti genus omne comparasti Nec desunt tibi vera Gratiana

^c Scipio Aemilianus

brated ^a As for the national contribution of one-sixth of an *as* per head for the funeral of Menenius^{491 B C} Agrippa, I should consider this as a mark of respect and also a measure rendered necessary by Agrippa's poverty, and not a matter of lavish generosity

XLIX Fashions in silver plate undergo marvellous variations owing to the vagaries of human taste,^{*Silver plate etc*} no kind of workmanship remaining long in favour At one time Fumian plate is in demand, at another Clodian, at another Gnatian^b—for we make even the factories feel at home at our tables—at another time the demand is for embossed plate and rough surfaces, where the metal has been cut out along the painted lines of the designs, while now we even fit removable shelves on our sideboards to carry the viands, and other pieces of plate we decorate with filigree, so that the file may have wasted as much silver as possible The orator Calvus complain-^{82-c 47 B C} ingly cries that cooking-pots are made of silver, but it is we who invented decorating carriages with chased silver, and it was in our day that the emperor Nero's wife Poppaea had the idea of even having her favourite mules shod with gold

L The younger Africanus^c left his heir thirty-^{129 B C} two pounds weight of silver, and the same person paraded 4370 pounds of silver in his triumphal procession after the conquest of Carthage This^{146 B C} was the amount of silver owned by the whole of Carthage, Rome's rival for the empire of the world, yet subsequently beaten in the show of plate on how many dinner-tables^d Indeed after totally destroying Numantia the same Africanus at his triumph gave a^{133-2 B C} largess of seven denarii a head to his troops—warriors not unworthy of such a general who were

PLINY NATURAL HISTORY

- viros illo imperatore dignos, quibus hoc satis fuit¹
frater eius Allobrogicus primus omnium pondo mille
habuit, at Diusus Livius in tribunatu plebei \bar{x} ¹
142 nam propter x ² pondo notatum a censoribus trium-
phalem senem fabulosum iam videtur, item Catum
Aelium, cum legati Aetolorum in consulatu pianden-
tem in fictilibus adissent, missa ab eis vasa argentea
non accepisse neque aliud habuisse argenti ad supre-
mum vitae diem quam duo pocula, quae L. Paulus
socer ei ob virtutem devicto Peiseo rege donavisset
143 invenimus legatos Carthaginiensium divisisse nullos
hominum inter sese benignius vivere quam Romanos
eodem enim argento apud omnes cenitavisse ipsos
at, Hercules, Pompeium Paulinum, Arelatensis
equitis Romani filium paternaque gente pellitum,
 \bar{xii} pondo argenti habuisse apud exercitum ferocissi-
144 mis gentibus oppositum scimus, (LI) lectos vero iam
pridem mulierum totos operum argento, pridem³ et
tuchnia quibus argentum addidisse primus traditur
Caivilius Pollio eques Romanus, non ut operiret aut
Delhaca specie faceret, sed Punica, eadem et

¹ \bar{x} conr. *Mayhoff* \bar{x} milia *cd* *Par* 6801 \bar{x} *rell* (\times *B*)

² \bar{x} *Frenshem coll Liv Ep XIV, Val Max II 94, etc*
quinque

³ pridem conr. *Mayhoff* quaedam *cdd* (quidem *cd* *Par Lat* 6797)

^a Q. Fabius Maximus Allobrogicus, consul in 121, and in reality a nephew of Aemilianus

^b P. Cornelius Rufinus

^c C. Fabius and Q. Aemilius Cf § 153

satisfied with that amount! His brother Allobrogicus ^a was the first person who ever owned ^{121 B C} 1000 lbs weight of silver, whereas Livius Dlusus when tribune of the people had 10,000 lbs For ^{91 B C} that an old warrior, ^b honoured with a triumphal procession, incurred the notice of the censors ^c for ^{270 B C} possessing ten pounds weight of silver—that nowadays seems legendary, and the same as to Catus Aelius's not accepting the silver plate presented to him by the envoys from Aetolia who during his consulship ^{198 B C} had found him eating his lunch off earthenware, and as to his never till the last day of his life having owned any other silver but the two bowls given to him by his wife's father Lucius Paulus in recognition of his valour at the time when King Peiseus was ^{168 B C} conquered We read that the Carthaginian ambassadors declared that no race of mankind lived on more amicable terms with one another than the Romans, inasmuch as in a round of banquets they had found the same service of plate in use at every house! But, good heavens, Pompeius Paulinus the son of a Knight of Rome at Ailes and descended on his father's side from a tribe that went about clad in skins, to our knowledge had 12,000 lbs weight of silver plate with him when on service with an army confronted by tribes of the greatest ferocity, (LI) while we know that ladies' bedsteads have for a long time now been entirely covered with silver plating, and so for long have banqueting-couches also It is recorded that Carvilius Pollio, Knight of Rome, was the first person who had silver put on these latter, though not so as to plate them all over or make them to the Delos pattern, but in the Carthaginian style In this latter style he also had bedsteads

PLINY NATURAL HISTORY

aureos fecit, nec multo post argentei Deliacos imitati
 sunt quae omnia expravit bellum civile Sullanum
 145 LII Paulo enim ante haec factae sunt lances e
 centenis libris argenti, quas tunc cuper CL numero
 fuisse Romae constat multosque ob eas proscriptos
 dolo concupiscentium erubescant annales, qui bel-
 lum civile illud talibus vitis inputavere, nostra aetas
 fortior fuit Claudii principatu servus eius Drusilla-
 nus ¹ nomine Rotundus, dispensator Hispaniae citeri-
 oris, quingenariam lancem habuit, cui fabricandae ²
 officina prius exaedificata fuerat, et comites eius octo
 ad CCL libras, quaeso, ut quam multi eas conservi eius
 146 inferrent, aut quibus cenantibus? Cornelius Nepos
 tradit ante Sullae victoriam duo tantum trichina
 Romae fuisse argentea, repositorius argentum addi
 sua memoria coeptum Fenestellæ, qui obiit novis-
 simo Tiberii Caesaris principatu, ait et testudinea
 tum in usum venisse, ante se autem paulo lignea,
 rotunda, solida nec multo maiora quam mensas fuisse,
 se quidem puero quadrata et compacta aut acere
 operta aut citro coepisse, mox additum argentum in

¹ V l Drusilianus

² V l cum fabricando quam fabricando *Detlefsen*

^a By Sulla in 82 B C

^b Fenestella died in A D 21, Tiberius in A D 37

made of gold, and not long afterwards silver bedsteads were made, in imitation of those of Delos.⁸ All this extravagance however was expiated by the civil war of Sulla 83-2 B C

LII In fact it was shortly before this period that silver dishes were made weighing a hundred pounds, and it is well-known that there were at that date over 150 of those at Rome, and that many people were sentenced to outlawry^a because of them, by the intrigues of people who coveted them. History which has held vices such as these to be responsible for that civil war may blush with shame, but our generation has gone one better. Under the Emperor Claudius his slave Drusillanus, who bore the name of Rotundus, the Emperor's steward of Nearer Spain, possessed a silver dish weighing 500 lbs, for the manufacture of which a workshop had first been specially built, and eight others of 250 lbs went with it as side-dishes, so that how many of his fellow-slaves, I ask, were to bring them in or who were to dine off them?² Cornelius Nepos records that before the victory won by Sulla there were only two silver dinner-couches at Rome, and that silver began to be used for decorating sideboards within his own recollection. And Fenestella who died towards the end of the principate of Tiberius^b says that tortoiseshell sideboards also came into fashion at that time, but a little before his day they had been solid round structures of wood, and not much larger than tables, but that even in his boyhood they began to be made square and of planks morticed together and veneered either with maple or citrus wood, while later silver was laid on at the corners and along the lines marking the joins, and Other silver furniture

PLINY NATURAL HISTORY

angulos lineasque per commissuras, tympana vero se iuvene appellata, tum a stateis et lances, quas antiqui magides vocaverant

- 147 LIII Nec copia argenti tantum fuit vita, sed valdius paene manipretus, idque iam pridem, ut ignoscamus nobis delphinos quinis milibus sester-tium ¹ in libras emptos C Gracchus habuit, L vero Crassus orator duos scyphos Mentonis artificis manu caelatos HS 7,² confessus tamen est numquam us uti propter verecundiam ausum scimus ³ eundem HS
- 148 VI in singulas libras vasa emptia habuisse Asia primum devicta luxuriam misit in Italiam, siquidem L Scipio in triumpho transtulit argenti caelati pondo mille et ⁴ cccc ⁵ et vasorum aureorum pondo MD anno conditae urbis DLV at eadem Asia donata ⁶ multo etiam gravius adflixit mores, inutiliorque victoria illa
- 149 hereditas Attalo rege mortuo fuit tum enim haec emendi Romae in auctionibus regis verecundia ex-empta est urbis anno DCXVII, medius LVII annis erudita civitate amare etiam, non solum admirari, opulentiam externam, immenso et Achaicae victoriae momento ad impellendos mores, quae et ipsa in hoc intervallo anno

¹ sestertium *Hardoun* sestertius

² *Urichs* C

³ scimus *Mayhoff* scitum *con* *Ian* constat *ed* *Basil*
sicut

⁴ mille et *Mayhoff* milia *aut* M

⁵ cccc *B* cccl *rell*

⁶ donata *cd* *Par* 6801 donata *Gelen*

^a *I e* Asia Minor and Syria, peace having been concluded with King Antiochus in 189 B C

^b Attalus III, King of Pergamum 138–133 B C, bequeathed his kingdom to Rome Part of it became the province Asia

^c *I e* the destruction of Corinth by L Mummius, 146 B C

when he was a young man they were called 'diurns,' and then also the dishes for which the old name had been magides came to be called basins from their resemblance to the scales of a balance

LIII Yet it is not only for quantities of silver that there is such a rage among mankind but there is an almost more violent passion for works of fine handicraft, and this goes back a long time, so that we of to-day may excuse ourselves from blame Gaius Gracchus had some figures of dolphins for 153-121 which he paid 5000 sesterces per pound, while the orator Lucius Crassus had a pan of chased goblets, 140-91 B the work of the artist Mento, that cost 100,000, yet admittedly he was too ashamed ever to use them It is known to us that he likewise owned some vessels that he bought for 6000 sesterces per pound It was the conquest of Asia ^a that first introduced luxury into Italy, inasmuch as Lucius Scipio carried in procession at his triumph 1400 lbs of chased silverware and vessels of gold weighing 1500 lbs this was in the 565th year from the foundation of the city of Rome But receiving Asia also as a gift 189 B C dealt a much more serious blow to our morals, and the bequest of it that came to us on the death of King Attalus ^b was more disadvantageous than the victory of Scipio For on that occasion all scruples entirely disappeared in regard to buying these articles at the auctions of the king's effects at Rome—the date was the 622nd year of the city, and in the 132 B C interval of 57 years our community had learnt not merely to admire but also to covet foreign opulence, an impetus having also been given to manners by the enormous shock of the conquest of Achaia,^c that victory itself also having during this interval

PLINY NATURAL HISTORY

150 urbis dcviii parita signa et tabulas pictas invenit ne
 Quid deesset, pariter quoque¹ luxuria nata est et
 Cathago sublata, ita congruentibus fatiis, ut et
 liberet amplecti vitia et liceat petiere et digna-
 tionem hinc aliqui veterum C. Marius post victo-
 riam Cimbricam cantharis potasse Libeni patris ex-
 emplo traditur, ille aiatos Alpinas et manipularis
 imperator

151 LIV Argenti usum in statuas primum divi Augusti
 temporum adulatione transisse falso existimatu
 iam enim triumpho Magni Pompei reperimus trans-
 latam Pharnacis, qui primus regnavit in Ponto,
 argenteam statuam, item Mithridatis Eupatoris et
 152 curius aureos argenteosque argentum succedit
 aliquando et auro luxu feminarum plebis compedes
 sibi facientium, quas induere aureas mos tutior vetet
 vidimus et ipsi Arellum Fuscum motum equestri
 ordine ob insignem calumniam, cum celebritatem²
 adsectaretur³ adolescentium scholae, argenteos anulos
 habentem et quid haec attinet colligere, cum
 capuli militum ebore etiam fastidito caelentur argen-
 to, vaginae catellis, baltea lamnis crepitent, iam vero

¹ quoque *Mayhoff* que

² celebritatem *B* celebritate *vell*

³ adsectaretur *Warmington* adsectarentur *edd* expec-
 tarentur *edd vell* assestationem *Hermolaus Barbarus*

^a He became king c 190 B C

^b Mithridates VI, King of Pontus, finally quelled in Pompey's
 campaigns

of time introduced the statues and pictures won in the 608th year of the city. That nothing might be lacking, luxury came into being simultaneously, with the downfall of Carthage, a fatal coincidence that gave us at one and the same time a taste for the vices and an opportunity for indulging in them. Some of the older generation also sought to gain esteem from these sources. It is recorded that Gaius Marius after his victory over the Cimbrians drank from Bacchic tankards, in imitation of Father Liber—he, the ploughman of Alpino who rose to the position of general from the ranks! 146 B C
101 B C

LIV The view is held that the extension of the use of silver to statues was made in the case of statues of his late lamented Majesty Augustus, owing to the sycophancy of the period, but this is erroneous. We find that previously a silver statue of Pharnaces the First,^a King of Pontus, was carried in the triumphal procession of Pompey the Great, as well as one of Mithridates Eupator,^b and also chariots of gold and silver were used. Likewise silver has at some periods even supplanted gold, female luxury among the plebeians having its shoe buckles made of silver, as wearing gold buckles would be prohibited by the more common fashion. We have ourselves seen Arellius Fuscus (who was expelled from the Equestrian order on a singularly grave charge) wearing silver rings when he sought to acquire celebrity for his school for youths. But what is the point of collecting these instances, when our soldiers' sword hilts are made of chased silver, even ivory not being thought good enough, and when their scabbards jingle with little silver chains and their belts with silver tabs, nay now-a-days our 61 B C

PLINY NATURAL HISTORY

- paedagogia in transitu virilitatis custodiantur argento, feminae laventur et nisi argentea solia fastidiant, eademque materia et cibis et probris serviat ?
- 153 videret haec Fabricius et stratas argento mulierum balneas ita, ut vestigio locus non sit, cum viis lavantium¹ Fabricius, qui bellicos imperatores plus quam pateram et salinum habere ex argento vetabat, videret hinc dona fortium fieri aut in haec frangi¹ heu mores, Fabrici nos pudet¹
- 154 LV Mirum auro caelando neminem inclaruisse, argento multos maxime tamen laudatus est Mentor, de quo supra diximus quattuor paria ab eo omnino¹ facta sunt, ac iam nullum extare dicitur Ephesiae Dianae templi ac² Capitolini incendii
- 155 Varro se et aereum signum³ eius habuisse scribit proximi ab eo in admiratione Acragas et Boethus et Mys fuere exstant omnium opera hodie in insula Rhodiorum, Boethi apud Lindiam Mineiam, Acragantis in templo Liberi patris in ipsa Rhodo Centauros Bacchasque caelati scyphi, Myos in eadem aede Silenos et Cupidines Acragantis et venatio in
- 156 scyphis magnam famam habuit post hos celebratus est Calamis, et Antipatro qui⁴ Satyrum in phiala

¹ vasorum *Thiersch*

² ac *Warmington* aut (iacet *cd Par* 6801)

³ sinum *Havet*

⁴ Antipatro qui *Mayhoff* Antipater quoque qui *Ulrichs* Antipater quoque *B A* quinque *rell* (quique *cd Par* 6801)

^a C Fabricius Luscinus, a man who held high offices c 285-275, but died a poor man

^b See § 142

^c In 356 B C

^d In 83 B C

schools for pages just at the point of adolescence wear silver badges as a safeguard, and women use silver to wash in and scold sitting-baths not made of silver, and the same substance does service both for our viands and for our baser needs? If only Fabius^a could see these displays of luxury—women's bathrooms with floors of silver, leaving nowhere to set your feet—and the women bathing in company with men—if only Fabius, who forbade^b gallant generals to possess more than a dish and a saltcellar of silver, could see how nowadays the rewards of valour are made from the utensils of luxury, or else are broken up to make them! Alas for our present manners—Fabius makes us blush!

LV It is a remarkable fact that the art of chasing gold has not brought celebrity to anyone, whereas persons celebrated for chasing silver are numerous. The most famous however is Mentor of whom we spoke above. Four pairs of goblets were all that he ever made, but it is said that none of them now survive, owing to the burning of the Temple of Artemis of Ephesus^c and of the Capitol^d. Varro says in his writings that he also possessed a bronze statue by this sculptor. Next to Mentor the artists most admired were Acragas, Boethus and Mys. Works by all of these exist at the present day in the island of Rhodes—one by Boethus in the temple of Athena at Lindus, some goblets engraved with Centaurs and Bacchants by Acragas in the temple of Father Liber or Dionysus in Rhodes itself, goblets with Silenus and Cupids by Mys in the same temple. Hunting scenes by Acragas on goblets also had a great reputation. After these in celebrity is Calamis, and Diodorus who was said to have placed

Famous examples of artistic work in silver

§ 147 and VII 127

PLINY NATURAL HISTORY

- gravatum somno conlocavisse venius quam caelasse dictus est Diodorus,¹ Stratonicus mox Cyzicenus, Tauriscus, item Ariston et Euniceus Mitylenaei laudantur et Hecataeus et ceteri Pompei Magni aetatem Pasiteles, Posidonius Ephesus, Hedys Thracides,² qui proelia armatosque caelavit, Zopyrus, qui Areopagitas et iudicium Orestis in duobus scyphis his $\overline{\alpha\eta}$ ³ aestimatis fuit et Pytheas, cuius ii unciae X $\overline{\alpha}$ veniunt Ulives et Diomedes erant in phialae emblemate Palladium subripientes fecit idem et cocos magiriscia appellatos parvulis potioris et e quibus ne exemplaria quidem liceret exprimere, tam opportuna muniae subtilitas erat habuit et Teucer crustarius famam, subitoque ars haec ita exolevit, ut sola iam vestustate censeatur usuque attritis caelaturis si nec⁴ figura discerni possit auctoritas constet
- 157
158 Argenti medicatis aquis inficitur atque adflatu salso, sic et⁵ in mediterraneis Hispaniae

LVI In argenti et auri metallis nascuntur etiamnum pigmenta sil et caeruleum sil proprie limus est optimum ex eo quod Atticum vocatur, pretium in pondo libras X ii, proximum marmorosum di-

¹ *lac Mayhoff qui Diodorus suppl con et Antipatro poetae Satyrum caelasse dictus <Diodorus> Stratonicus*

² Hedys, Thracides *Furtwangler* hedystrachides *B* haedi stadices, iedisthracides *aut alia rell* Hedystatides *Sillig* Telesarchides *con Dilthey*

³ $\overline{\alpha\eta}$ *Gelen* | $\overline{\alpha\eta}$ | *B* $\overline{\alpha\eta}$ *rell*

⁴ si nec *Urlichs* si ne *B* ne *rell*

⁵ sic et *L Poinssinet de Sivry* sicut

^a Who probably wrote an epigram (*Anth Plan* 248) stating that Diodorus 'put to sleep' the satyr The MSS of Pliny make Antipater the engraver, while in the Anthology the epigram is attributed to Plato the younger

^b At Athens for the murder of his mother, according to the story

in a condition of heavy sleep rather than engraved on a bowl a Slumbering Satyr for Antipater.^a Next praise is awarded to Stratonicus of Cyzicus, Tauiscus, also Ariston and Eunicus of Mitylene, and Hecataeus, and, around the period of Pompey the Great, Pasiteles, Posidonius of Ephesus, Hedys,^c Thracides who engraved battle scenes and men in armour, and Zopyrus who engraved the Athenian Council of Areopagus and the Trial of Orestes^b on two goblets valued at 12,000 sesterces. There was also Pytheas, one of whose works sold at the price of 10,000 denarii for two ounces. It consisted of an embossed base of a bowl representing Odysseus and Diomedes in the act of stealing the Palladium. The same artist also carved some very small drinking cups in the shape of cooks known as 'The Chefs in Miniature,' which it was not allowed even to reproduce by casts, so liable to damage was the fineness of the work. Also Teucer the artist in embossed work attained celebrity, and all of a sudden this art so declined that it is now only valued in old specimens, and authority attaches to engravings worn with use even if the very design is invisible.

Silver becomes tarnished by contact with water from springs containing minerals and by the salt breezes, as happens also even in the interior regions of Spain.^c

LVI In gold and silver mines also are formed the pigments yellow ochre and blue. Yellow ochre is strictly speaking a slime. The best kind comes from what is called Attic slime, its price is two denarii a pound. The next best is marbled ochre,

Oxides and hydroxides of iron

^c The sentence is probably misplaced

^d Various oxides and hydroxides of iron

PLINY NATURAL HISTORY

midio Attici pretio tertium genus est pressum,
 159 quod alii Scyricum vocant, ex insula Scyrio, iam et ex
 Achaia, quo utuntur ad picturae umbras, pretium in
 libris his binis, dupondius vero detractis quod lucidum
 vocant, e Gallia veniens hoc autem et Attico ad
 lumina utuntur, ad abacos non nisi marmoreo,
 quoniam marmor in eo resistit amaritudinis calcis
 effoditur et ad alia ab urbe lapidem in montibus,
 postea vitur pressum appellantibus qui adulterant
 sed esse falsum exustumque, amaritudine apparet et
 quoniam resolutum in pulverem est

160 Sile pingere instituere primi Polygnotus et Micon,
 Attico dumtaxat secuta aetas hoc ad lumina usa
 est, ad umbras autem Scyrico et Lydio Lydium
 Sardibus emebatur, quod nunc obmutuit¹

161 LVII Caeruleum harena est, huius genera tria
 fuere antiquitus Aegyptium maxime² probatum,³
 Scythicum mox⁴ dilutum facile et, cum teritur, in
 quattuor colores mutatur, candidiorem nigrioremve
 et crassiolem tenuioremve, praefertur huic etiam-
 num Cyprium accessit his Puteolanum et Hispa-
 niense, harena ibi confici coepta tingitur autem
 omne et in sua coquitur herba bibitque sucum
 reliqua confectura eadem quae chrysocollae

¹ *Vl* obmutuit, omittunt

² *Vl* quod maxime

³ *Vl* probatum

⁴ mox *Mayhoff* (coni et umore) hoc

^a Azurite, a basic copper carbonate

which costs half the price of Attic. The third kind is dark ochre, which other people call Scyric ochre, as it comes from the island of Scyros, and nowadays also from Achaia, which they use for the shadows of a painting, price two sesterces a pound, while that called clear ochre, coming from Gaul, costs two asses less. This and the Attic kind they use for painting different kinds of light, but only marbled ochre for squared panel designs, because the marble in it resists the acidity of the lime. This ochre is also dug up in the mountains 20 miles from Rome. It is afterwards burnt, and by some people it is adulterated and passed off as dark ochre, but the fact that it is not genuine and has been burnt is shown by its acidity and by its crumbling into dust.

The custom of using yellow ochre for painting was first introduced by Polygnotus and Micon, but they only used the kind from Attica. The following period employed this for representing lights but ochre from Scyros and Lydia for shadows. Lydian ochre used to be sold at Sardis, but now it has quite gone out.

LVII The blue pigment ^a is a sand. In old days *Azurite* there were three varieties: the Egyptian is thought most highly of, next the Scythian mixes easily with water, and changes into four colours when ground, lighter or darker and coarser or finer, to this blue the Cyprian is now preferred. To these were added the Pozzuoli blue, and the Spanish blue, when blue sand-deposits began to be worked in those places. Every kind however undergoes a dyeing process, being boiled with a special plant and absorbing its juice, but the remainder of the process of manufacture is the same as with gold-solder. §§ 86 seq

PLINY NATURAL HISTORY

- 162 Ex caeruleo fit quod vocatur lomentum, perficitur
 id lavando terendoque hoc est caeruleo candidius
 pretia eius X x¹ in libras, caerulei X viii usus in
 cieta, calcis inpatiens nuper accessit et Vestor-
 rianum, ab auctore appellatum fit ex Aegyptii
 levissima parte, pretium eius in libris X xi idem
 et Puteolani usus, praeterque ad fenestras, cyanon²
 163 vocant non pridem adportari et Indicum coeptum
 est, cuius pretium X vii ratio in pictura ad incisuras,
 hoc est umbras dividendas ab lumine est et vilissi-
 mum³ genus lomenti, quod⁴ tintum vocant, quinis
 assibus aestimatum

Caerulei sinceri experimentum in carbone ut flagret,
 flos viola arida decocta in aqua sucoque per linteum
 expresso in cretam Eietriam vis in medicina ut
 purget ulcera, itaque et emplastris adiciunt, item
 164 causticis tentum autem difficillime sil in medendo
 leniter mordet adstringitque et explet ulcera
 uritur in fictilibus, ut prosit

Pretia rerum, quae usquam posuimus, non ignora-
 mus alia aliis locis esse et omnibus paene mutari annis,
 prout navigatione constiterint aut ut quisque merca-
 tus sit aut aliquis praevalens manceps annonam

¹ §§ 162-163 numeri varie traduntur

² cyanon *Brother* ex *com Durandi* cyllon *B V ll* cyllon,
 cyclonon, cynolon

³ *V ll* utilissimum, subtilissimum

⁴ *I l* quondam quod dant *edd vett* quidam *Hermolaus*
Parbai is

From blue is made the substance called blue wash, which is produced by washing and grinding it. Blue wash is of a paler colour than blue, and it costs 10 denarii per pound, while blue costs 8 denarii. Blue is used on a surface of clay, as it will not stand lime. A recent addition has been Vestorian blue, called after the man Vestorius who invented it, it is made from the finest part of Egyptian blue, and costs 11 denarii per pound. Pozzuoli blue is employed in the same way, and also near windows ^a, it is called cyanos. Not long ago Indian blue or indigo began to be imported, its price being 7 denarii, painters use it for dividing-lines, that is, for separating shadows from light. There is also a blue wash of a very inferior kind, called ground blue, valued at 5 asses.

The test of genuine Indian blue is that when laid on burning coal it should blaze, it is adulterated by boiling dried violets in water and straining the liquor through linen on to Eretian earth ^b. Its use as a medicament is to clean out ulcers, consequently it is employed as an ingredient in plasters, and also in cauteries, but it is extremely difficult to pound up. Yellow ochre used as a drug has a gently mordant and astringent effect, and fills up ulcers. To make it beneficial it is burnt in earthenware vessels.

We are not unaware that the prices of articles which we have stated at various points differ in different places and alter nearly every year, according to the shipping costs or the terms on which a particular merchant has bought them, or as some dealer dominating the market may whip up the

^a *I e* it does not lose its colour in the light

^b See p. 283, note *k*

PLINY NATURAL HISTORY

flagellet, non oblitū Demetrium a tota Seplasia
Neronis principatu accusatum apud consules, poni
tamen necessarium fuit quæ pleiūque erant Romae,
ut exprimeretur auctoritas rerum

^a A district in the city of Capua occupied by druggists and
perfumers and sellers of pigments

selling price, we have not forgotten that, under the emperor Nero, Demetrius was prosecuted before the Consuls by the entire *Seplasia* ^a Nevertheless I have found it necessary to state the prices usual at Rome, in order to give an idea of a standard value of commodities

BOOK XXXIV

LIBER XXXIV

I Proxime dicantur aëris metalla, cui et in usu proximum est pretium, immo vero ante argentum ac paene etiam ante aurum Corinthio, stipis quoque auctoritas, ut diximus hinc aëra militum, tribuni aërium et aerarium, obaerati, aëre diuti docuimus quamdiu populus Romanus aere tantum signato usus esset et illa re¹ vetustas aequalem urbi auctoritatem eius declarat, a rege Numa collegio tertio aerarium fabrum instituto

2 II Vena quo dictum est modo foditur ignique perficitur fit et e lapide aëroso, quem vocant cadmean, celeberrima trans maria et quondam in Campania, nunc et in Bergomatium agro extrema parte Italiae, ferunt nuper etiam in Germania provincia reperiuntur fit et ex alio lapide, quem chalcitum appellant, in

¹ alia re *Mayhoff* (*qui et alio conr*) *alta conr Ian alia*

^a The word *aes* usually means a prepared alloy of copper and tin that is, bronze, it also included brass (alloy of copper and zinc) Much ancient *aes* contained lead Pure copper was properly called *aes Cyprum* Note that native copper ore or metallic copper is not common in the Old World, but the ancients discovered that it could be produced artificially by heating the much more plentiful oxides, sulphides, silicates, and carbonates of copper

^b The others were the College of Priests and the College of Augurs

^c Apparently mineral calamine and smithsonite = silicate and carbonate of zinc, cf § 100

BOOK XXXIV

I Let our next subject be ores, etc., of copper *Base metal* and bronze ^a the metals which in point of utility have the next value, in fact Corinthian bronze is *Bronze and copper* valued before silver and almost even before gold, and bronze is also the standard of payments in money as we have said hence *aes* is embodied in the *XXXVIII* terms denoting the pay of soldiers, the treasury *43, 108* paymasters and the public treasury, persons held in debt, and soldiers whose pay is stopped We have pointed out for what a long time the Roman *XXXIII* nation used no coinage except bronze, and by *42 sqq* another fact antiquity shows that the importance of bronze is as old as the city—the fact that the third corporation ^b established by King Numa was *Trad date* the Guild of Coppersmiths *715–672 B*

II The method followed in mining deposits of *Copper* copper and purifying the ore by firing is that which has been stated The metal is also got from a *XXXII* coppery stone called by a Greek name *cadmea*,^c a *95 sqq* kind in high repute coming from overseas and also formerly found in Campania and at the present day in the territory of Bergamo on the farthest confines of Italy, and it is also reported to have been recently found in the province ^d of Germany In Cyprus, where copper was first discovered, it is also

^a Only the region of the left bank of the Rhine is meant

PLINY NATURAL HISTORY

- Cyprio, ubi prima aëris inventio, mox vilitis præcipua reposito in aliis tenuis præstantiore maximeque aurichalco, quod præcipuam bonitatem admirationemque diu optinuit nec reperiitur longo iam
 3 tempore effeta telluris proximum bonitate fuit Sallustianum in Ceutionum Alpino tractu, non longi et ipsum aëvi, successitque ei Livianum in Gallia utrumque a metallorum dominis appellatum, illud ab
 4 amico divi Augusti, hoc a coniuge velocis defectus Livianum quoque, certe admodum exiguum inventui summa gloriæ nunc in Marianum conversa, quod et Cordubense dicitur hoc a Liviano cadmean maxime sorbet et aurichalci bonitatem imitatum in sestertius dupondianisque, Cyprio suo assibus contentis et hactenus nobilitas in aëre naturali¹ se habet
- 5 III Reliqua genera cura constant, quæ suis locis reddentur, summa claritate ante omnia indicata quondam aes confusum auro argentoque miscebatur, et tamen ars pretiosior erat, nunc incertum est, peior haec sit an materia, minumque, cum ad infinitum operum pretia creverint, auctoritas artis extincta est

¹ naturali con: *Mayhoff* naturalis

^a See § 117, note

^b *Aurichalcum*, the right word being probably *orichalcum* = ορείχαλκος, 'mountain copper,' that is yellow copper ore and the brass made from it

^c Named after the great Marius (155-86 B C)

obtained from another stone also, called chalcitis,^a copper ore, this was however afterwards of exceptionally low value when a better copper was found in other countries, and especially gold-copper,^b which long maintained an outstanding quality and popularity, but which for a long time now has not been found, the ground being exhausted. The next in quality was the Sallustius copper, occurring in the Alpine region of Haute Savoie, though this also only lasted a short time, and after it came the Livia copper in Gaul. Each was named from the owners of the mines, the former from the friend of Augustus and the latter from his wife. Livia copper also quickly gave out. At all events it is found in very small quantity. The highest reputation has now gone to the Marius^c copper, also called Cordova copper, next to the Livia variety this kind most readily absorbs *cadmea* and reproduces the excellence of gold-copper in making sesterces and double-*as* pieces, the single *as* having to be content with its proper Cyprus copper. That is the extent of the high quality contained in natural bronze and copper.

III The remaining kinds are made artificially, and will be described in their proper places, the most distinguished sorts being indicated first of all. Formerly copper used to be blended with a mixture of gold and silver, and nevertheless artistry was valued more highly than the metal, but nowadays it is a doubtful point whether the workmanship or the material is worse, and it is a surprising thing that, though the prices paid for these works of art have grown beyond all limit, the importance attached to this craftsmanship of working in metals has quite disappeared. For this, which formerly used

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quaestus enim causa, ut omnia, exerceri coepta est quae gloriae solebat—ideo etiam deorum adscripta operi, cum procures gentium claritatem et hac via quaererent—, adeoque exolevit fundendi aenis pretiosi ratio, ut iam diu ne fortuna quidem in ea re ius artis habeat

- 6 Ex illa autem antiqua gloria Corinthium maxime laudatum hoc casus miscuit Corintho, cum caperetur, incensa, mureque circa id multorum adfectatio furuit,¹ quippe cum tradatur non alia de causa Verrem, quem M. Cicero damnaverat, proscriptum cum eo ab Antonio, quoniam² Corinthus cessurum se ei negavisset ac mihi maior pars eorum simulare eam scientiam videtur ad segregandos sese a ceteris magis quam intellegere aliquid ibi subtilius, et
- 7 hoc paucis docebo Corinthus capta est olympiadis CLVIII anno tertio, nostrae urbis DCVIII, cum ante haec saecula³ fictores nobiles esse desissent, quorum isti omnia signa hodie Corinthia appellant quapropter ad coarguendos eos ponemus artificum aetates, nam urbis nostrae annos ex supra dicta comparatione olympiadum colligere facile erit

¹ furuit *Warmington* furit *Sillig*, *Ian* fuerit *cdl* (fuit *cd* *Par* 6801)

² quoniam *Ian* quam quoniam *con* *Sillig* quoniam *B* quam *rell* (quam quod *cd* *Par* 6801)

³ saeculo *quid ap Dalecamp*

^a *I e* Hephaestus or Vulcan

^b Or 'has won praise normally due to art'

^c Corinth was destroyed by the Roman forces under Mummius 146 B C

to be practised for the sake of glory—consequently it was even attributed to the workmanship of gods,^a and the leading men of all the nations used to seek for reputation by this method also—has now, like everything else, begun to be practised for the sake of gain, and the method of casting costly works of art in bronze has so gone out that for a long time now not even luck in this matter has had the privilege of producing art ^b

Of the bronze which was renowned in early days, *Corinthian bronze* the Corinthian is the most highly praised. This is a compound that was produced by accident, when Corinth was burned ^c at the time of its capture, and there has been a wonderful mania among many people for possessing this metal—in fact it is recorded that Veires, whose conviction Marcus Cicero had ^{70 B C} procured, was, together with Cicero, proscribed by Antony for no other reason than because he had ^{143 B C} refused to give up to Antony some pieces of Corinthian ware, and to me the majority of these collectors seem only to make a pretence of being connoisseurs, so as to separate themselves from the multitude, rather than to have any exceptionally refined insight in this matter, and this I will briefly show. Corinth was taken in the third year of the 158th Olympiad, which was the 608th year of our city, when for ages there had no longer been any famous artists in metalwork, yet these persons designate all the specimens of their work as Corinthian bronzes. In order therefore to refute them we will state the periods to which these artists belong, of course it will be easy to turn the Olympiads into the years since the foundation of our city by referring to the two corresponding dates given ^{146 B C}

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- sunt ergo vasa tantum Corinthia, quae isti elegantiores modo ad esculecta transferunt, modo in luceinas aut trulleos nullo munditiarum dispectu¹
- 8 eius aeris² tria genera candidum argento nitore quam proxime accedens, in quo illa mixtura praevaluit, alterum, in quo auri fulva natura, tertium, in quo aequalis omnium temperies fuit praeter haec est cuius ratio non potest reddi, quamquam hominis manu est,³ at fortuna temperatur⁴ in simulacris signisque illud suo colore pretiosum ad iocineris imaginem vergens, quod ideo hepatizon appellant, procul a Corinthio, longe tamen ante Aegineticum atque Deliacum, quae diu optinere principatum
- 9 IV Antiquissima aeris gloria Deliaci fuit, mercatus in Delo celebrante toto orbe, et ideo cura officinis tricliniorum pedibus fulcrisque ibi prima aeris nobilitas, pervenit deinde et ad deum simulacra effigiemque hominum et aliorum animalium
- 10 V Proxima laus Aeginetico fuit, insula et ipsa eo,⁵ nec quod ibi gigneretur,⁶ sed officinarum temperatura, nobilitata bos aereus inde captus in foio boario est Romae hoc erit exemplar Aeginetici

¹ *l l* despectu

² eius aeris *Warmington* aeris *coni Mayhoff* eius

³ manus est *Mayhoff* manu facta *edd vett* manus et *B* manu sed aut manus sed *rell*

⁴ *V l* temperamentum temperaturum *C F W Müller*

⁵ eo *Mayhoff* est

⁶ gigneretur *Sillig* signetur aut gignens aut gimens

^a Or 'for the neatness of the workmanship'

above The only genuine Corinthian vessels are then those which your connoisseurs sometimes convert into dishes for food and sometimes into lamps or even washing basins, without nice regard for decency ^a There are three kinds of this sort of bronze a white variety, coming very near to silver in brilliance, in which the alloy of silver predominates, a second kind, in which the yellow quality of gold predominates, and a third kind in which all the metals were blended in equal proportions Besides these there is another mixture the formula for which cannot be given, although it is man's handiwork, but the bronze valued in portrait statues and others for its peculiar colour, approaching the appearance of liver and consequently called by a Greek name 'hepatizon' meaning 'liverish,' is a blend produced by luck, it is far behind the Corinthian blend, yet a long way in front of the bronze of Aegina and that of Delos which long held the first rank

IV The Delian bronze was the earliest to become famous, the whole world thronging the markets in Delos, and hence the attention paid to the processes of making it It was at Delos that bronze first came into prominence as a material used for the feet and framework of dining-couches, and later it came to be employed also for images of the gods and statues of men and other living things *Delian bronze*

V The next most famous bronze was the Aeginetan, and the island of Aegina itself became celebrated for it, though not because the metal copper was mined there but because of the compounding done in the workshops A bronze ox looted from Aegina stands in the cattle-market at Rome, and will serve as a specimen of Aegina bronze, *Aeginetan bronze*

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aeris, Deliaci autem Iuppiteri in Capitolio in Iovis
Tonantis aede illo aere Myron usus est, hoc Polyclitus, aequales atque condiscipuli, sic¹ aemulatio
et in materia fuit

VI Privatum Aegina candelabrorum superficiem
11 dumtaxat elaboravit, sicut Tarentum scapos in us
ergo iuncta commendatio officinarum est nec
pudet tribunorum militarium salarius emere, cum
ipsum nomen a candelarum lumine inpositum
appareat accessio candelabri talis fuit Theonis
iussu praeconis Clesippus fullo gibbei et praeterea
et alio foedus aspectu, emente id Gegania h. l.
eadem ostentante in convivio empta ludibrii causa
12 nudatus atque impudentia² libidinis receptus in
torum, mox in testamentum, praedives numinum
vice illud candelabrum coluit et hanc Corinthus
fabulam adiecit, vindicatis tamen moribus nobili
sepulchro, per quod aeterna supra terras Geganiae
dedecoris memoria duraret sed cum esse nulla

¹ sic *Mayhoff* sit *B*¹ sed

² impotentia *Gelen*

^a Built in 22 B C

^b Myron fl c 475 B C, Polyclitus c 435 See pp 168-171

^c *I e* the sockets holding the candles, the other parts being the stems and the feet

while that of Delos is seen in the Zeus or Jupiter in the temple^a of Jupiter the Thunderer on the Capitol Aegina bronze was used by Myron and that from Delos by Polyclitus, who were contemporaries^b and fellow-pupils, thus there was rivalry between them even in their choice of materials

VI Aegina specialized in producing only the upper parts^c of chandeliers, and similarly Taranto made only the stems, and consequently credit for manufacture is, in the matter of these articles, shared between these two localities Nor are people ashamed to buy these at a price equal to the pay of a military tribune, although they clearly take even then name from the lighted candles they carry At the sale of a chandelier of this sort by the instructions of the auctioneer (named Theon) selling it there was thrown in as part of the bargain the fuller Clesippus a humpback and also of a hideous appearance in other respects besides, the lot being bought by a woman named Gegania for 50,000 sesterces This woman gave a party to show off her purchases, and for the mockery of the guests the man appeared with no clothes on, his mistress conceiving an outrageous passion for him admitted him to her bed and later gave him a place in her will Thus becoming excessively rich he worshipped the lampstand in question as a divinity and so caused this story to be attached to Corinthian lampstands in general, though the claims of morality were vindicated by his erecting a noble tombstone to perpetuate throughout the living world for all time the memory of Gegania's shame But although it is admitted that there are no lampstands made of

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Corinthia candelabria constet, nomen id praecipue in his celebratum, quoniam Mummi victoria Corinthum quidem diruit, sed e compluribus Aethiae oppidis simul aera dispersit

13 VII Pisci limina etiam ac valvas in templis ex aere factitavere inveno et a Cn Octavio, qui de Perseo rege navalem triumphum egit, factam porticum duplicem ad eum Flaminium, quae Corinthia sit appellata a capitulis aereis columnarum, Vestae quoque aedem ipsam Syracusana superficie tegi placuisse Syracusana sunt in Pantheo capita columnarum a M Agrippa posita quin etiam privata opulentia eo modo usurpata est Camillo inter cimina obiecit Spurius Carvilius quaestor, ostia quod aeriata haberet in domo

14 VIII Nam trichina aerata abacosque et monopodia Cn Manum Asia devicta primum invenisse triumpho suo, quem duxit anno urbis DLXVII, L Piso auctor est, Antias quidem heredes L Crassi oratoris multa etiam trichina aerata vendidisse ex aere factitavere et cortinas tripodum nomine [et]¹ Delphicas, quoniam donis² maxime Apollini Delphico dicabantur placuere et lychnuchi pensiles in delubris

¹ et Mayhoff ac B a cd Levd Voss m 1 om rell

² donis cdd pler ludis cd Poll erat B aeratae Ulrichs eae Ian dono con Warmington

Corinthian metal, yet this name specially is commonly attached to them, because although Mummius's victory destroyed Corinth, it caused the dispersal of bronzes from a number of the towns of Achaia at the same time

VII In early times the lintels and folding doors of temples as well were commonly made of bronze *Various uses of bronze* I find that also Gnaeus Octavius, who was granted a triumph after a sea-fight against King Peiseus, constructed the double colonnade at the Flaminian circus which owing to the bronze capitals of its columns has received the name of the Corinthian portico, and that a resolution was passed that even the temple of Vesta should have its roof covered with an outer coating of Syracusan metal The capitals of the pillars in the Pantheon which were put up by Marcus Agrippa are of Syracusan metal Moreover even private opulence has been employed in similar uses one of the charges brought against Camillus by the quaestor Spurius Carvilius was that in his house he had doors covered with bronze *169 B C* *167 B C* *391 B C*

VIII Again, according to Lucius Piso dinner-couches and panelled sideboards and one-leg tables decorated with bronze were first introduced by Gnaeus Manlius at the triumph which he celebrated in the 567th year of the city after the conquest of Asia, and as a matter of fact Antias states that the sons of Lucius Crassus the orator also sold a number of dinner couches decorated with bronze It was even customary for bronze to be used for making the cauldrons on tripods called Delphic cauldrons because they used to be chiefly dedicated as gifts to Apollo of Delphi, also lamp-holders were popular suspended from the ceiling in temples or with then *187 B C*

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aut uborum mala ferentium modo lucentes, quale est in templo Apollinis Palatini quod Alexander Magnus Thebarum expugnatione captum in Cyme dicaverat eidem deo

- 15 IX Transiit deinde ais vulgo ubique ad effigies deorum Romae simulacrum ex aere factum Ceeripimum reperiio ex peculo Sp Cassi, quem regnum adfectantem pater ipsius interemerit transiit et adus ad hominum statuas atque imagines multis modis bitumine antiqui tinguebant eas, quo magis mirum est placuisse auro integere hoc nescio an Romanum fuerit inventum, certe etiam nomen non¹
- 16 habet vetustum² effigies hominum non solebant exprimi nisi aliqua inlustri causa perpetuitatem merentium, primo sacrorum certaminum victoria maximeque Olympiae, ubi omnium, qui vicissent, statuas dicari mos erat, eorum vero, qui ter ibi superavissent, ex membris ipsorum similitudine
- 17 expressa, quas iconicas vocant Athenienses nescio an primis omnium Harmodio et Aristogitonityrannicidis publice posuerint statuas hoc actum est eodem anno, quo et Romae reges pulsii excepta deinde res est a toto orbe terrarum humanissima

¹ nomen non *B* romae non *rell* Romae nomen *Sillig*

² vetustum *B* vetustatem *rell*

^a Dedicated by Augustus in 27 B C

^b Probably to provide a protective polish

^c From the Greek *εἰκών*, *εικωνικός*

^d By Antenor The conspiracy of Harmodius and Aristogiton took place in 514–513 B C A marble copy of Critius' and Nesiotes' later substitute still exists See note on pp 256–257

lights arranged to look like apples hanging on trees like the specimen in the temple ^a of Apollo of the Palatine which had been part of the booty taken by Alexander the Great at the storming of Thebes and dedicated by him to the same deity at Cyme

IX But after a time this art in all places came to be usually devoted to statues of gods I find that the first image of a god made of bronze at Rome was that dedicated to Ceres and paid for out of the property of Spurius Cassius who was put to death by his own father when trying to make himself king The practice passed over from the gods to statues and representations of human beings also, in various forms In early days people used to stain statues with bitumen,^b which makes it the more remarkable that they afterwards became fond of covering them with gold This was perhaps a Roman invention, but it certainly has a name of no long standing at Rome It was not customary to make effigies of human beings unless they deserved lasting commemoration for some distinguished reason, in the first case victory in the sacred contests and particularly those at Olympia, where it was the custom to dedicate statues of all who had won a competition, these statues, in the case of those who had been victorious there three times, were modelled as exact personal likenesses of the winners—what are called *iconicae*,^c portrait statues I rather believe that the first portrait statues ^d officially erected at Athens were those of the tyrannicides Harmodius and Aristogiton This happened in the same year as that in which the Kings were also driven out at Rome The practice of erecting statues from a most civilized sense of rivalry was afterwards

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ambitione, et in omnium municipiorum fons statuæ
ornamentum esse coepere propagarique¹ memoria
hominum et honores legendi ævo basibus inscribi,
ne in sepulcris tantum legeientur mox forum et in
domibus privatis factum atque in atris honos
clientium instituit sic colere patronos

- 18 X Togatae effigies antiquitus ita dicebantur
placuisse et nudae tenentes hastam ab epheborum e
gymnasii exemplaribus, quas Achilleas vocant
Graeci res nihil velare, at contra Romana ac militaris
thoraces addere Caesar quidem dictatori longatam
sibi dici in foro suo passus est nam Lupeiorum
habitu tam noviciae sunt quam quae nuper prodire
paenulis indutae Mancinus eo habitu sibi statuit,
19 quo deditus fuerat notatum ab auctoribus et
L Accium poetam in Camenarum aede maxima
forma statuam sibi posuisse, cum brevis admodum
fuisset equestres utique statuæ Romanam cele-
brationem habent, ordo sine dubio a Graecis exemplo
sed illi celetas tantum dicebant in sacris victores,

¹ propagarique B prorogarique rell

^a *Forum Caesaris* or *Forum Iulium* was built by Julius Caesar in the eighth region of the city, near the temple of Janus and the old forum which had become too small

^b Mancinus, consul 137 B C, in a war with the Numantines made a treaty which the senate refused to ratify, and he was handed over to the enemy though they refused to receive him. He seems to have regarded this as discreditable to the senate but not to himself

taken up by the whole of the world and the custom proceeded to arise of having statues adorning the public places of all municipal towns and of perpetuating the memory of human beings and of inscribing lists of honours on the bases to be read for all time, so that such records should not be read on their tombs only. Soon after a publicity centre was established even in private houses and in our own halls the respect felt by clients inaugurated this method of doing honour to their patrons.

X In old days the statues dedicated were simply clad in the toga. Also naked figures holding spears, made from models of Greek young men from the gymnasiums—what are called figures of Achilles—became popular. The Greek practice is to leave the figure entirely nude, whereas Roman and military statuary adds a breastplate. Indeed the dictator Cæsar gave permission for a statue wearing a cuirass to be erected in his honour in his Forum^a. As for the statues in the garb of the Luperci, they are modern innovations, just as much as the portrait-statues dressed in cloaks that have recently appeared. Mancinus^b set up a statue of himself in the dress that he had worn when surrendered to the enemy. It has been remarked by writers that the poet Lucius Accius also set up a very tall statue of himself in the shrine of the Latin Muses, although he was a very short man. Assuredly equestrian statues are popular at Rome, the fashion for them having no doubt been derived from Greece, but the Greeks used only to erect statues of winners of races on horse-back at their sacred contests, although subsequently they also erected statues of

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postea vero et qui bigis vel quadrigis vicissent,
unde et nostri cuius nati in^{us}, qui triumphavissent
serum hoc, et in us non nisi a divo Augusto seuges,
sicut¹ elephanti

- 20 XI Non vetus et bigarum celebratio in us, qui
praetura functi cuiu vecti essent per circum,
antiquior columnarum, sicuti C Maenio, qui devicerat
priscos Latinos, quibus ex foedere tertias praedae
populus Romanus praestabat, eodemque in consulatu
in suggestu rostra devictis Antiatibus fixerat anno
urbis ccccxvi, item C Duillio, qui primus navalem
triumphum egit de Poenis, quae est etiam nunc in
21 foro, item L Minucio praefecto annonae extra
portam Trigeminam unciaria stipe conlati—nescio
an primo honore tali a populo, antea enim a senatu
erat,—praeclara res, ni frivolis coepisset initus
namque et Atti Navi statua fuit ante curiam—basis
eius conflagravit curia incensa P Clodii funere—,

¹ sicut et *edd vett* aut *Eugenie Sellers*

^a For purposes which were not religious For a dedication of a six horsed chariot in 189 B C, cf Livy XLXVIII 35, 4

^b For the surviving inscription of the *Columna Rostrata* see *Remains of Old Latin*, IV, pp 128-131

^c Famous augur under King Tarquinius Priscus (traditional dates 616-579 B C)

winners with two-horse or four-horse chariots, and this is the origin of our chariot-groups in honour of those who have celebrated a triumphal procession. But this belongs to a late date, and among those monuments it was not till the time of his late lamented Majesty Augustus that chariots with six horses occurred,^a and likewise elephants.

XI The custom of erecting memorial chariots with two horses in the case of those who held the office of praetor and had ridden round the Circus in a chariot is not an old one, that of statues on pillars is of earlier date, for instance the statue of honour of Gaius Maenius who had vanquished the Old Latins to whom the Roman nation gave by treaty a third part of the booty won from them. It was in the same consulship that the nation, after defeating the people of Antium, had fixed on the platform the beaked prows of ships taken in the victory over the people of Antium, in the 416th year of the city of Rome, and similarly the statue to Gaius Duilius, who was the first to obtain a naval triumph over the Carthaginians—this statue still stands in the forum^b—and likewise that in honour of the praefect of markets Lucius Minucius outside the Triplets Gate, defrayed by a tax of one-twelfth of an *as* per head. I rather think this was the first time that an honour of this nature came from the whole people, previously it had been bestowed by the senate. It would be a very distinguished honour had it not originated on such unimportant occasions. In fact also the statue of Attus Navius^c stood in front of the senate-house—when the senate-house was set on fire at the funeral of Publius Clodius the base of the statue was burnt

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fuit et Hermodori Ephesi in comitio, legum, quas
 decemviri scribebant, interpretis, publice dicata
 22 alia causa, alia auctoritas M Horati Cocchis statuæ—
 quæ durat hodieque—, cum hostes a ponte sublicio
 solus arcuisset equidem et Sibyllæ iuxta iostia
 esse non miror, tres sint licet una quam Sextus
 Pacuvius Taurus aed pl restituit¹, duæ quas
 M Messalla primas putarem has et Atti Navi,
 positas ætate Tarquini Prisci, ni regum anteceden-
 23 tum essent in Capitolio, ex iis Romuli et Tatii sine
 tunica, sicut et Camilli in iostis et ante aedem
 Castorum fuit Q Marci Tremuli equestris togata,
 qui Samnites bis devicerat captaque Anagnia popu-
 lum stipendio liberaverat inter antiquissimas sunt
 et Tulli Cloeli, L Rosci, Sp Nauti,² C Fulcini in
 iostis, a Fidenatibus in legatione interfectorum
 24 hoc a re p tribui solebat iniuria caesis, sicut alius et
 P Iunio, Ti Coruncanio, qui ab Teuta Illyriorum
 regina interfecti erant non omittendum videtur,
 quod annales adnotavere, tripodaneas iis statuas in

¹ V l instituit

² nauti B Antii Caesarus coll Liv IV 17

^a I e Castor and Pollux Suetonius records (*Div Iul*, 10)
 that it was dedicated to both, but usually spoken of as the
 Temple of Castor

with it, and the statue of Heimodorus of Ephesus the interpreter of the laws drafted by the decemvirs, dedicated at the public cost, stood in the Assembly-place of Rome. There was a different motive and another reason—an important one—for the statue of Marcus Horatius Cocles, which has survived even to the present day, it was erected because he had single-handed barred the enemy's passage of the Bridge on Piles. Also, it does not at all surprise me that statues of the Sibyl stand near the Beaked Platform though there are three of them—one restored by Sextus Pacuvius Taurus, aedile of the plebs, and two by Marcus Messalla. I should think these statues and that of Attus Navius, all erected in the period of Tarquinius Priscus, were the first, if it were not for the statues on the Capitol of the kings who reigned before him, among them the figures of Romulus and Tatius without the tunic, as also that of Camillus on the Beaked Platform. Also there was in front of the temple of the Castors ^a an equestrian statue of Quintus Marcius Tremulus, wearing a toga, he had twice vanquished the Samnites, and by taking Anagni delivered the nation from payment of war-tax. Among the very old statues are also those at the Platform of Tullus Cloelius, Lucius Roscius, Spurius Nautius, and Gaius Fulcinius, all assassinated by the people of Fidenae when on an embassy to them. It was the custom for the state to confer this honour on those who had been wrongfully put to death, as among others Publius Junius and Titus Coruncanius, who had been killed by Teuta the Queen of the Illyrians. It would seem not to be proper to omit the fact noted by the annals that the statues of these persons,

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- foro statutas, haec videlicet mensura honorata
 func erat non praeterib^a et Cn Octavium ob
 unum SC¹ verbum hic regem Antiochum daturum
 se responsum dicentem vnga, quam tenebat forte,
 circumscipsit priusque, quam egiederetur ciculo illo,
 responsum dare coegit in qua legatione interfecto
 senatus statum poni iussit quam oculatissimo loco,
 25 eaque est in rostris invenitur statua decreta et
 Taraciae Gariae sive Fufetiae vngini Vestali, ut
 poneretur ubi vellet, quod adiectum non minus
 honois habet quam feminae esse decretam meit-
 tum eius ipsis ponam annalium verbis quod cam-
 pum Tiberinum gratificata esset ea populo
 26 XII Invenio et Pythagorae et Alcibiadi in
 cornibus comitu positas, cum bello Samniti Apollo
 Pythius iussisset fortissimo Graiae gentis et alteri
 sapientissimo simulacra celebri loco dicari eae
 stetere, donec Sulla dictator ibi cuniam faceret
 mirumque est, illos patres Sociati cunctis ab eodem
 deo sapientia praelato Pythagoran praetulisse aut
 tot alius virtute Alcibiaden et quemquam utroque²
 Themistochl

¹ sc B cl Levd Voss scilicet rell

² utraque con Mayhoff

^a This is a mistake This act was performed by C Popilius Laenias when Antiochus IV was on his 4th campaign against Egypt

^b In fact on an embassy to Syria connected with troubles on the accession of Antiochus V (not IV)

^c *Oculati simus* is the 'single word' to which Pliny alludes above, meaning 'most visible to the eye'

^d It was in fact an enlargement of the original Senate house

^e The Athenian chiefly responsible for Athens' sea power and the defeat of Xerxes by sea at Salamis in 480 B C

erected in the forum, were three feet in height, showing that this was the scale of these marks of honour in those days. I will not pass over the case of Gnaeus Octavius also, because of a single word that occurs in a Decree of the Senate. When King Antiochus IV said he intended to answer him, Octavius^a with the stick he happened to be holding in his hand drew a line all round him and compelled him to give his answer before he stepped out of the circle. And as Octavius was killed while on this embassy,^b the senate ordered a statue to be erected to him 'in the spot most eyed'^c and that statue stands on the Platform. We also find that a decree was passed to erect a statue to a Vestal Virgin named Taracia Gaia or Fufetia 'to be placed where she wished,' an addition that is as great a compliment as the fact that a statue was decreed in honour of a woman. For the Vestal's merits I will quote the actual words of the Annals 'because she had made a gratuitous present to the nation of the field by the Tiber.'

XII I also find that statues were erected to Pythagoras and to Alcibiades, in the corners of the Place of Assembly, when during one of our Samnite Wars Pythian Apollo had commanded the erection in some conspicuous position of an effigy of the bravest man of the Greek race, and likewise, one of the wisest man, these remained until Sulla the dictator made^d the Senate-house on the site. It is surprising that those illustrious senators of ours rated Pythagoras above Socrates, whom the same deity had put above all the rest of mankind in respect of wisdom, or rated Alcibiades above so many other men in manly virtue, or anybody above Themistocles^e for wisdom and manly virtue combined.

*Greek
statues*

343 B C

80 B C

PLINY NATURAL HISTORY

27. Columnarum ratio erat attolli super ceteros mortales, quod et alicui significant novicio invento primus tamen honos coepit a Graecis, nullique auctor plures statuas dicatas quam Phalereo Demetrio Athenis, siquidem cccxi statuere, nondum anno hunc numerum dierum excedente, quas mox laceravere statuerunt et Romae in omnibus vicis tribus Matio Grutidiano, ut diximus, easdemque subvertere Sullae introitu
28. XIII Pedestres sine dubio Romae fuere in auctoritate longo tempore, et equestrium tamen origo perquam vetus est, cum feminis etiam honore communicato Cloeliae statua equestri, ceu parum esset toga eam cingi, cum Lucretiae ac Bruto, qui expulerant reges, propter quos Cloelia inter obsides
- 29 fuerat, non decernerentur hanc primam cum Coclitis publice dicatam crediderim—Atto enim ac Sibyllae Tarquinius, ac reges sibi ipsos posuisse verisimile est—, nisi Cloeliae quoque Piso traderet ab us positam, qui una obsides fuissent, redditus a Porsina ¹ in honorem eius e diverso Annus Fetialis

¹ porsina B¹ porsena cd Par 6801 porsenna rell

^a An Attic orator and statesman who lived c 345–282 B C, and was exiled in 307 B C after a ten years' tyranny

^b The last king of Rome, Tarquinius Superbus, was supported against his republican enemies at Rome by Lars Porsena the Tuscan king of Clusium, who invaded Rome and seized the Capitol, but withdrew after receiving twenty hostages. Among them was a maiden Cloelia, who escaped, swam across the Tiber and reached Rome. She was sent back to Porsena, but he was so struck with her gallantry that he set her free and allowed her to take back with her some of the other hostages. The rape of Lucretia by Sextus Tarquinius led to

The purport of placing statues of men on columns was to elevate them above all other mortals, which is also the meaning conveyed by the new invention of arches. Nevertheless the honour originally began with the Greeks, and I do not think that any person ever had more statues erected to him than Demetrius^a of Phalerum had at Athens, inasmuch as they set up 360, at a period when the year did not yet exceed that number of days, statues however the Athenians soon shattered in pieces. At Rome also the tribes in all the districts set up statues to Marius Gnatidius, as we have stated, and likewise threw them down again at the entrance of Sulla.

*Roman
statues*

XXXIII
132

XIII Statues of persons on foot undoubtedly held the field at Rome for a long time, equestrian statues also however are of considerable antiquity, and this distinction was actually extended to women with the equestrian statue of Cloelia, as if it were not enough for her to be clad in a toga, although statues were not voted to Lucretia and Brutus, who had driven out the kings owing to whom Cloelia had been handed over with others as a hostage^b. I should have held the view that her statue and that of Cocles were the first erected at the public expense— for it is probable that the monuments to Attus and the Sibyl were erected by Tarquin and those of the kings by themselves—were it not for the statement of Piso that the statue of Cloelia also was erected by the persons who had been hostages with her, when they were given back by Porsena, as a mark of honour to her, whereas on the other hand Annius Fetiatis states that an equestrian figure which once

510-509
B C

508 B C

§ 22

the expulsion of the Tarquins by Brutus and his companions and the establishment of the republican government

PLINY NATURAL HISTORY

equiem, quae fuerit contra Iovis Statoris aedem in vestibulo Superbi domus, Valeriae fuisse, Publicolae consulis filiae, eamque solam refugisse Tiberimque transnavisse ceteris opsidibus, qui ¹ Porsinae ² mittebantur, interemptis Tarquinii insidiis

- 30 XIV L Piso prodidit M Aemilio C Popilio iterum cos a censoribus P Cornelio Scipione M Popilio statuas circa forum eorum, qui magistratum gesserant, sublatis omnes praeter eas, quae populi aut senatus sententia statutae essent, eam vero, quam apud aedem Telluris statuisset sibi Sp Cassius, qui regnum adfectaverat, etiam confictam a censoribus nimirum in ea quoque re ambitionem provide-
- 31 bant illi viri exstant Catonis in censura vociferationes mulieribus statuas Romanis ³ in provinciis poni, nec tamen potuit inhibere, quo minus Romae quoque ponerentur, sicuti Corneliae Gracchorum matris, quae fuit Africani prioris filia sedens huic posita soleisque sine ammento insignis in Metelli publica porticu, quae statua nunc est in Octaviae operibus

- 32 XV Publice autem ab externis posita est Romae C Aelio tr pl lege perlatam in Sthenium Stallum

¹ *Vl* quae

² porsinae *B*¹ porsennae

³ statuas romanis *B* romanis statuas *rell* (*r* in *p* statuas *cl Par* 6801)

^a Public buildings in Rome erected by Augustus on the site of Metellus' colonnade built in 146 B C and named after his sister Octavia The *basis* of Cornelia's statue survives

stood opposite the temple of Jupiter Stator in the forecourt of Tarquinius Superbus's palace was the statue of Valeria, daughter of Publicola, the consul, and that she alone had escaped and had swum across the Tiber, the other hostages who were being sent to Poisena having been made away with by a stratagem of Tarquin

XIV Lucius Piso has recorded that, in the second consulship of Marcus Aemilius and Gaius Popilius, the censors Publius Cornelius Scipio and Marcus Popilius caused all the statues round the forum of men who had held office as magistrates to be removed excepting those that had been set up by a resolution of the people or the Senate, while the statue which Spurius Cassius, who had aspired to monarchy, had erected in his own honour before the temple of the Earth was actually melted down by censors obviously the men of those days took precautions against ambition in the matter of statues also Some declamatory utterances made by Cato during his censorship are extant protesting against the erection in the Roman provinces of statues to women, yet all the same he was powerless to prevent this being done at Rome also for instance there is the statue of Cornelia the mother of the Gracchi and daughter of the elder Scipio Africanus This represents her in a sitting position and is remarkable because there are no straps to the shoes, it stood in the public colonnade of Metellus, but is now in Octavia's Buildings ^a

XV The first statue publicly erected at Rome by foreigners was that in honour of the tribune of the people Gaius Aelius, for having introduced a law against Sthenius Stallius the Lucanian who had

PLINY NATURAL HISTORY

Lucanum, qui Thurinos bis infestaverat ob id Aelium Thuriini statua et corona aenea donarunt undem postea Fabucium donavere statua liberati obsidione, passimque gentes¹ in clientelas ita² receptae, et adeo discrimen omne sublatum, ut Hannibalis etiam statuae tribus locis visantur in ea urbe, cuius intra muros solus hostium emisit hastam

- 33 XVI Fuisse autem statuariam artem familiarem Italiae quoque et vetustam, indicant Hercules ab Euandio sacratus, ut produnt, in foio boario, qui triumphalis vocatur atque per triumphos vestitus habitu triumphali, praeterea Ianus geminus a Numa rege dicatus, qui pacis bellicue argumento colitur digitis ita figuratis, ut ccclv³ dierum nota⁴ et aevi
34 esse deum indicent⁵ signa quoque Tuscanica per terras dispeisa quin⁶ in Etruria factitata sint,⁷ non est dubium deorum tantum putarem ea fuisse, ni Metiodorus Scepsius, cui cognomen a Romani nominis odio inditum est, propter MM statuarum Volsinos expugnatos obiceret miunumque mihi

¹ gentes *cdd* clientes *Gelen* statuae *edd vett*

² *VI* clientela sua sunt *edd vett*

³ ccclv *edd vett* cccclv

⁴ nota aut per significationem anni temporis *cdd seclud*
aut temporis *Mayhoff*

⁵ indicent *B* indicet *rell* indicaret *edd vett*

⁶ quin *Detlefsen* quae quin *Urlichs* quae

⁷ sint *B om rell*

^a When he came up to the walls of Rome in 211 B C without attacking the city

^b Presumably three fingers of one hand made III, the first finger and thumb of that hand V, and the first finger and second finger of the other hand V, the thumb and the third and little finger of that hand being bent and not counting. The MSS have 365 (which number was not valid until Caesar's

twice made an attack upon Thurn, for this the ^{289, 28} inhabitants of that place presented Aelius with a statue and a crown of gold. The same people afterwards presented Fabricius with a statue for having rescued them from a state of siege, and various ^{285 B} races successively in some such way placed themselves under Roman patronage, and all discrimination was so completely abrogated that even a statue of Hannibal may be seen in three places in the city within the walls of which he alone of its national foes had hurled a spear ^a

XVI That the art of statuary was familiar to ^{Italian} Italy also and of long standing there is indicated by ^{statues} the statue of Hercules in the Cattle Market said to have been dedicated by Evander, which is called 'Hercules Triumphant,' and on the occasion of triumphal processions is arrayed in triumphal vestments, and also by the two-faced Janus, dedicated by King Numa, which is worshipped as indicating war and peace, the fingers of the statue being so arranged as to indicate the 355 ^b days of the year, and to betoken that Janus is the god of the duration of time. Also there is no doubt that the so-called Tuscanic images scattered all over the world were regularly made in Etruria. I should have supposed these to have been statues of deities only, were it not that Metrodorus of Scepsis, who received his surname ^c from his hatred of the very name of Rome, reproached us with having taken by storm the city of Volsini for the sake of the 2000 statues which it ^{264 B C} contained. And it seems to me surprising that

time). In such a case the VI could be represented by the thumb and the first and second fingers of one hand

^c Misoromaeus, *μισορωμαῖος*, 'Roman hater'

PLINY NATURAL HISTORY

videtur, cum statuarum origo tam vetus Italiae sit, lignea potius aut fictilia deorum simulacra in delubris dicata usque ad devictam Asiam, unde luxuria

- 35 Similitudines exprimendi quae prima fuerit origo, in ea, quam plasticen Graeci vocant, dici convenientius erit, etenim prior quam statuarum fuit sed haec ad infinitum effloruit, multorum voluminum opere, si quis plura persequi velit, omnia enim quis possit?
- 36 (XVII) M Scauri aedilitate signorum MMM in scaena tantum fuisse temporum theatrum Mummius Achaia devicta replevit urbem, non relicturus filiae dotem, cur enim non cum excusatione ponatur? multa et Luculli invexere Rhodi etiamnum III¹ signorum esse Mucianus ter eos prodidit, nec pauciora Athenis, Olympiae, Delphis superesse creduntur quis ista
- 37 mortuum persequi possit aut quis usus noscendi intellegatur? insignia maxime et aliqua de causa notata voluptarium sit attigisse artificesque celebratos nominavisse, singulorum quoque inexplicabili multitudine, cum Lysippus MD opera fecisse prodatur, tantae omnia artis, ut claustrum possent dare vel singula numerum apparuisse defuncto eo, cum

¹ III *Mayhoff* tria milia *cd Par* 6801 *LXXIII aut LXXIII*
rell

^a See p 110, notes

^b L Licinius Lucullus, consul 74 B C, and his brother M, consul 73 B C

although the initiation of statuary in Italy dates so far back, the images of the gods dedicated in the shrines should have been more usually of wood or terracotta right down to the conquest of Asia,^a which introduced luxury here

What was the first origin of representing likenesses in the round will be more suitably discussed when we are dealing with the art for which the Greek term is 'plasticē' *plastic*, as that was earlier than the art of bronze statuary. But the latter has flourished to an extent passing all limit and offers a subject that would occupy many volumes if one wanted to give a rather extensive account of it—for as for a completely exhaustive account, who could achieve that? (XVII) In the aedileship of Marcus Scaurus there were 3000 statues on the stage in what was only a temporary theatre. Mummius after conquering Achaia filled the city with statues, though destined not to leave enough at his death to provide a dowry for his daughter—for why not mention this as well as the fact that excuses it? A great many were also imported by the Luculli.^b Yet it is stated by Mucianus who was three times consul that there are still 3000 statues at Rhodes, and no smaller number are believed still to exist at Athens, Olympia and Delphi. What mortal man could recapitulate them all, or what value can be felt in such information? Still it may give pleasure just to allude to the most remarkable and to name the artists of celebrity, though it would be impossible to enumerate the total number of the works of each, inasmuch as Lysippus is said to have executed 1500 works of art, all of them so skilful that each of them by itself might have made him famous, the number

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thesaurum effiegisset heres, solitum enim ex manipfetio cuiusque signi denarios seponere aureos singulos

- 38 Evecta supra humanam fidem ais est successu, mox et audacia in aigumentum successus unum exemplum adferam, nec deorum hominumve similitudinis expressae aetas nostra vidit in Capitolio, priusquam id novissime confligaret a Vitellianis incensum, in cella Iunonis canem ex aere volnus suum lambentem, cuius eximium miraculum et indiscreta veri similitudo non eo solum intellegitur, quod ibi dicata fuerat, verum et satisfactione, nam quoniam summa nulla pari videbatur, capite tutelarios
- 39 cavere pro ea institutum publice fuit (XVIII) audaciae innumera sunt exempla moles quippe excogitatas videmus statuarum, quas colossaeas vocant, turibus pares talis est in Capitolio Apollo trialatus a M Lucullo ex Apollonia Ponti urbe, xxx
- 40 cubitorum, D¹ talentis factus, talis in campo Martio Iuppiteri, a² Claudio Cæsare dicatus, qui devoratus Pompeiani theatri vicinitate, talis et Tarenti factus a Lysippo, XL cubitorum mirum in eo quod manu, ut ferunt, mobilis ea ratio libramenti est, ut nullis convellatur procellis id quidem providisse et artifex dicitur modico intervallo, unde maxime

¹ D *add* L *Overbeck* CL *edd* *vett* (*recte* ?)
^a B *cd* Par 6801 aulo *rell* a divo Gronov

^a No doubt a *σπαθήρ*

^b This figure seems too large

^c Lit 'is swallowed up by'

is said to have been discovered after his decease, when his heir broke open his coffers, it having been his practice to put aside a coin^a of the value of one gold denarius out of what he got as reward for his handicraft for each statue

The art rose to incredible heights in success and afterwards in boldness of design To prove its success I will adduce one instance, and that not of a representation of either a god or a man our own generation saw on the Capitol, before it last went up in flames burnt at the hands of the adherents of Vitellius, in the shrine of Juno, a bronze figure of a hound licking its wound, the marvellous excellence and absolute truth to life of which is shown not only by the fact of its dedication in that place but also by the method taken for insuring it, for as no sum of money seemed to equal its value, the government enacted that its custodians should be answerable for its safety with their lives (XVIII) Of boldness of design the examples are innumerable We see enormously huge statues devised, what are called Colossi, as large as towers Such is the Apollo on the Capitol, brought over by Marcus Lucullus from Apollonia, a city of Pontus, 45 ft high, which cost 500^b talents to make, or the Jupiter which the Emperor Claudius dedicated in the Campus Martius, which is dwarfed^c by the proximity of the theatre of Pompey, or the 60 ft high statue at Taranto made by Lysippus The remarkable thing in the case of the last is that though it can be moved by the hand, it is so nicely balanced, so it is said, that it is not dislodged from its place by any storms This indeed, it is said, the artist himself provided against by erecting a column a short distance from

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- flatum opus erat fiangi, opposita columna itaque magnitudinem propter difficultatemque movendi¹ non attigit eum Fabius Verucosus, cum Herculem, 41 qui est in Capitolio, inde transferret ante omnes autem in admnatione fuit Solis colossus Rhodi, quem fecerat Chares Lindius, Lysippi supra dicti discipulus LXX cubitorum altitudinis fuit hoc simulacrum, post LXVI² annum terrae motu prostratum, sed iacens quoque miraculo est pauci pollicem eius amplectuntur, maiores sunt digiti quam pleeraeque statuae vasti specus hiant defiactis membris, spectantur intus magnae molis saxa, quorum pondere stabiliverat eum constituens duodecim annis tradunt effectum ccc talentis, quae contigerant ex apparatu regis Demetrii relicto morae taedio 42 obsessa³ Rhodo sunt alii centum numero in eadem urbe colossi minores hoc, sed ubicumque singuli fuissent, nobilitaturi locum, praeterque hos deorum quinque, quos fecit Bryaxis
- 43 Factitavit colossos et Italia videmus certe Tuscanicum Apollinem in bibliotheca templi Augusti quinquaginta pedum a pollice, dubium aere mirabiliorum an pulchritudine fecit et Sp Carvilius Iovem, qui est in Capitolio, victis Samnitibus sacrata

¹ movendi *B*

² LXVI *B*¹ LVI

³ obsessa *B* obesse a *rell* (obsesso *cd Vind*) obsessae *Sillig del ead vett (item rhodo)*

^a Demetrius Poliorcetes

^b Cf § 34

it to shelter it on the side where it was most necessary to break the force of the wind. Accordingly, because of its size, and the difficulty of moving it with great labour, Fabius Veirucosus left it alone when he transferred the Heracles from that place to the Capitol where it now stands. But calling for admiration before all others was the colossal Statue of the Sun at Rhodes made by Chares of Lindus, the pupil of Lysippus mentioned above. This statue was 105 ft high, and, 66 years after its erection, was overthrown by an earthquake, but even lying on the ground it is a marvel. Few people can make their arms meet round the thumb of the figure, and the fingers are larger than most statues, and where the limbs have been broken off enormous cavities yawn, while inside are seen great masses of rock with the weight of which the artist steadied it when he erected it. It is recorded that it took twelve years to complete and cost 300 talents, money realized from the engines of war belonging to King Demetrius^a which he had abandoned when he got tired of the protracted siege of Rhodes. There are a hundred other colossal statues in the same city, which though smaller than this one would have each of them brought fame to any place where it might have stood alone, and besides these there were five colossal statues of gods, made by Bryaxis.

Italy also was fond of making colossal statues. At all events we see the Tuscan^b Apollo in the library of the Temple of Augustus, 50 ft in height measuring from the toe, and it is a question whether it is more remarkable for the quality of the bronze or for the beauty of the work. Spurius Carvilius also made the Jupiter that stands in the Capitol,

209 B C

*Chares
Colossal
statue at
Rhodes*

c 226 B

305-4 B

*Other
colossal
statues*

PLINY NATURAL HISTORY

lege pugnantibus e pectoralibus eorum ocreisque et
galeis amplitudo tanta est, ut conspiciatur a
Latian Iove e reliquis hmae suam statuam
44 fecit, quae est ante pedes simulacri eius habent in
eodem Capitolio admirationem et capita duo, quae
P Lentulus cos dicavit, alterum a Charete supra
dicto factum, alterum fecit dicus¹ compara-
tione in tantum victus, ut artificum² minime pro-
45 babilis videatur verum omnem amplitudinem sta-
tuarum eius generis vicit aetate nostra Zenodorus
Mercurio facto in civitate Galliae Arvernus per
annos decem, HS [CCCC]³ manipretii, postquam satis
artem ibi adprobaverat, Romam accitus a Nerone,
ubi destinatum illius principis simulacio⁴ colossum
fecit cvis⁵ pedum in⁶ longitudinem, qui dicatus
Soli⁷ venerationi est damnatis sceleribus illius
46 principis mirabamur in officina non modo ex
argilla similitudinem insignem, verum et de parvis
admodum surculis⁸ quod primum operis instaurati
fuit et statua indicavit interisse fundendi aenis
scientiam, cum et Nero largum aurum argentumque
paratus esset et Zenodorus scientia fingendi cae-
47 landique nulli veterum postponeretur statuam Ar-

¹ Prodicus *con* Sillig Pythodocus *Urlichs* coll § 85

² *Vl* artificium

³ [CCCC] *Ian* CCCC

⁴ simulacro *B* simulacrum *rell*

⁵ cvis *Detlefsen* CXIX *Ian* CXIXS *Urlichs* cui
nonaginta (= CVIXO) *B* cui x aut alia *rell*

⁶ in *add* Mayhoff

⁷ soli *B* solis *rell*

⁸ subleis *con* Warmington

^a On the Alban Mount, ten miles from Rome

^b Only the last five letters of the name survive in MSS
Another conjectured restoration is Pythodocus, cf § 85

after defeating the Samnites in the war which they ^{293 B C} fought under a most solemn oath, the metal was obtained from their breastplates, greaves and helmets, and the size of the figure is so great that it can be seen from the temple of Jupiter Latialis.^a Out of the bronze filings left over Carvilius made the statue of himself that stands at the feet of the statue of Jupiter. The Capitol also contains two much admired heads dedicated by the consul Publius ^{57 B C} Lentulus, one made by Chares above-mentioned and the other by Prodicus,^b who is so outdone by comparison as to seem the poorest of artists. But all the gigantic statues of this class have been beaten in our period by Zenodorus with the Hermes or *Zenodorus* Mercury which he made in the community of the Avernus in Gaul, it took him ten years and the sum paid for its making was 40,000,000 sesterces. Having given sufficient proof of his artistic skill in Gaul he was summoned to Rome by Nero, and there made the ^{A D 54-65} colossal statue, 106½ ft high, intended to represent that emperor but now, dedicated to the sun after the condemnation of that emperor's crimes, it is an object of awe. In his studio we used not only to admire the remarkable likeness of the clay model but also to marvel at the frame of quite small timbers^c which constituted the first stage of the work put in hand. This statue has shown that skill in bronze-founding has perished, since Nero was quite ready to provide gold and silver, and also Zenodorus was counted inferior to none of the artists of old in his knowledge of modelling and chasing. When he

^a A skeleton for the model, or, according to Eugénie Sellers, slender wax tubes covering a wax model, which was then cased in loam before bronze was poured in.

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- veinorum cum faceret provinciae Dubio¹ Avito praesidente, duo pocula Calamidis manu caelata, quae Cassio Salano avunculo eius, praeceptorum suo, Germanicus Caesar adamata donaverat, aemulatus est, ut vix ulla differentia esset artis quanto maior Zenodoro praestantia fuit, tanto magis deprehenditur aeris obliteratio
- 48 Signis, quae vocant Corinthia, plerique in tantum capiuntur, ut secum circumferant, sicut Hortensius orator sphingem Verri reo ablatam, propter quam Cicero illo iudicio in altercatione neganti ei, aenigmata se intellegere, respondit debere, quoniam sphingem domi haberet circumtulit et Neio princeps Amazonem, de qua dicemus, et paulo ante Cestius consularis² signum,³ quod secum etiam in proelio habuit Alexandri quoque Magni tabernaculum sustinere traduntur solitae statucae, ex quibus duae ante Martis Ultoris aedem dicatae sunt, totidem ante regiam
- 49 XIX Minoribus simulacris signisque innumera prope artificum multitudo nobilitata est, ante omnes tamen Phidias Atheniensis Iove Olympio⁴ facto ex eboie quidem et auro, sed et ex aere signa fecit

¹ Vibio *cd Par* 6801 Duuo *J Klein*

² consularis Laris *Frohner*

³ sphingem *con Mayhoff seclud Ulrichs*

⁴ Olympio *B Olympiae rell*

^a The reference is probably to statuettes, not medallions or signet rings or brooches

^b Apparently Pliny has made a mistake, because Alexander's *σκηνη* was the canopy (supported by four golden statues of Victory) of the chariot which carried Alexander's dead body to Alexandria

^c In the forum of Augustus at Rome

^d Near the temple of Vesta

was making the statue for the Arverni, when the governor of the province, was Dubius Avitus, he produced facsimiles of two chased cups, the handiwork of Calamis, which Germanicus Caesar had prized highly and had presented to his tutor Cassius Salanus, Avitus's uncle, the copies were so skilfully made that there was scarcely any difference in artistry between them and the originals. The greater was the eminence of Zenodorus, the more we realize how the art of working bronze has deteriorated.

Owners of the figurines ^a called Corinthian are *Figurines* usually so enamoured of them that they carry them about with them, for instance the orator Hortensius was never parted from the sphinx which he had got out of Venice when on trial, this explains Cicero's ^{70 B C} retort when Hortensius in the course of an altercation at the trial in question said he was not good at riddles. 'You ought to be,' said Cicero, 'as you keep a figurine in your pocket.' The emperor Nero also ^{A D 54-68} used to carry about with him an Amazon which we shall describe later, and a little before Nero, the ^{§ 82} ex-consul Gaius Cestius used to go about with a sphinx, which he had with him even on the battle-field. It is also said that the tent ^b of Alexander the Great was regularly erected with four statues as tent-poles, two of which have now been dedicated to stand in front of the temple ^c of Mars the Avenger and two in front of the Royal Palace ^d.

XIX An almost innumerable multitude of artists *Small statues* have been rendered famous by statues and figures *Famous Greek statuaries* of smaller size, but before them all stands the *Born c 500 B C* Athenian Pheidias, celebrated for the statue of *c 450 B C* Olympian Zeus, which in fact was made of ivory and gold, although he also made figures of bronze. He

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floruit autem olympiade LXXXIII, circiter CCC urbis
 nostrae annum,¹ quo eodem tempore aemuli eius
 fuere Alcamenes, Critias, Nesiotes, Hegias, et deinde
 olympiade LXXXVII Hagelades, Callon, Goigias Lacon,
 ruisus LXXX Polychitus, Phiadmon, Myron, Pytha-
 50 goias, Scopas, Perellus² ex his Polychitus discipulos
 habuit Aigium, Asopodorum, Alexim, Aristidem,
 Phrynonem, Dinonem,³ Athenodorum, Demean Clit-
 torum, Myron Lycium LXXXV olympiade florere
 Naucydes, Dinomenes, Canachus, Patioclus, cum
 Polycles, Cephisodotus, Leochares,⁴ Hypatodorus,⁵
 cum Praxiteles, Euphianor, cum Aetion, Theu-
 51 machus cum Lysippus fuit, cum et Alexander
 Magnus, item Lysistatus frater eius, Sthenis⁶
 Euphron, Sofocles,⁷ Sostatus, Ion, Silanion—in hoc
 mirabile quod nullo doctore nobilis fuit, ipse disci-
 pulum habuit Zeuxiaden—, cum Eutychides, Euthy-
 crates, Laippus,⁸ Cephisodotus,⁹ Timachus, Pyro-
 52 machus¹⁰ cessavit deinde ars ac rursus olympiade
 CLVI reuixit, cum fuere longe quidem infra praedictos,

¹ VI anno

² Perellus B Perellus rell Perileus Thiersch

³ om B

⁴ Leochares Hermolaus Barbarus (cf § 79) leuchares B
 leuihares aut sim rell

⁵ Epatodorus Hermolaus Barbarus

⁶ Sthenis Hermolaus Barbarus thenis

⁷ Euphron, Sofocles Loewy E, Eucles Ian euphron
 fucles B euphronicles aut ides rell

⁸ Dahippus Hardoun

⁹ Cephisodorus Gelen

¹⁰ Phyromachus Kerl

^a More exactly the 306th to the 309th year of the city of
 Rome = 448–445 B C

^b In merit For Critias the *Marmor Parium* has Critios

BOOK XXXIV ΛΙΧ 49-52

flourished in the 83rd Olympiad, about ^a the 300th ^{448-445 B}
 year of our city, at which same period his rivals ^b ^{454 B C}
 were Alcamenes, Critias, Nesiotes and Hegias, and
 later, in the 87th Olympiad there were Hagelades, ^c ^{432-429 B}
 Callon and the Spartan Gorgias, and again in the
 90th Olympiad Polycleitus, Phradmon, Myron, ^{420-417 B}
 Pythagoras, ^d Scopas ^e and Perellus. Of these
 Polycleitus had as pupils Argius, Asopodorus, Alexis,
 Aristides, Phryno, Dino, Athenodorus, and Demeas
 of Clitor, and Myron had Lycius. In the 95th ^{400-397 B}
 Olympiad flourished Naucydes, Dinomenes, Cana-
 chus and Patioclus, and in the 102nd Polycles, Ceph- ^{372-369 B}
 sodotus, Leochaies and Hypatodorus, in the 104th ^{364-361 B}
 Praxiteles and Euphianor in the 107th Aetion ^{352-349 B}
 and Themmachus. Lysippus ^f was in the 113th, the ^{327-324 B}
 period of Alexander the Great, and likewise his
 brother Lysistratus, Sthenius, Euphron, Sophocles,
 Sostratus, Ion and Silamon—a remarkable fact in
 the case of the last named being that he became
 famous without having had any teacher, he him-
 self had Zeuxiades as his pupil—and in the 121st ^{295-292 B}
 Eutychides, Euthycrates, Laippus, ^g Cephisodotus,
 Timarchus and Pyiomachus. After that the art
 languished, and it revived again in the 156th ^{156-153 B}
 Olympiad, when there were the following, far
 inferior it is true to those mentioned above, but

^c The Greek form is Hagelaidas. He really flourished
 c. 515-485 B C.

^d In fact Myron's best work was done before 450 B C,
 Pythagoras' before 475 B C.

^e In fact Scopas was still working in 350 B C unless we have
 here an elder Scopas.

^f He was apparently working soon after 369 B C.

^g Probably this should be Daippus as in § 87, cf. Paus. VI
 12, 6 16, 35, Δαιππύς.

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probatū tamen, Antaeus,¹ Callistratus, Polycles Athenaeus, Callixenus, Pythocles, Pythias, Timocles

53 Ita distinctis celeberrimorum aetatibus insignes iaptim transcurram, reliqua multitudine passim dispersa venire autem et in certamen laudatissimi, quamquam diversis aetatibus geniti, quoniam fecerant Amazonas, quae cum in templo Dianae Ephesiae dicarentur, placuit eligi probatissimam ipsorum artificum, qui praesentes erant, iudicio, cum² apparuit eam esse, quam omnes secundam a sua quisque iudicassent haec est Polycliti, proxima ab ea Phidiae, tertia Ctesilae,³ quarta Cydonis, quinta Phradmonis

54 Phidias praeter Iovem Olympium, quem nemo aemulatur, fecit ex ebore auroque⁴ Minervam Athenis, quae est in Parthenone stans, ex aere vero praeter Amazonem supra dictam Minervam tam eximiae pulchritudinis, ut formae cognomen acceperit fecit et chiduchum et aliam Minervam, quam Romae Paulus Aemilius ad aedem Fortunae Huiusce Diei dicavit, item duo signa, quae Catulus in eadem aede, pallata et alterum colossicon nudum, primusque artem toreuticen aperuisse atque demonstrasse merito iudicatu

¹ Antheus *edd vet*

² tum *O Jahn*

³ ctesilae *B Ctesilae Gelen Ctesilai Hardouin*

⁴ auroque *con Mayhoff* aequē

^a Some blunder has produced a new artist out of the name Cydonia, Ctesilas s birthplace

^b Perhaps Callimorphos, 'fair of form'

^c A priestess probably, but possibly Persephone

nevertheless artists of repute Antaeus, Callistratus, Polycles of Athens, Callixenus, Pythocles, Pythias and Timocles

After thus defining the periods of the most famous artists, I will hastily run through those of outstanding distinction, throwing in the rest of the throng here and there under various heads. The most celebrated have also come into competition with each other, although born at different periods, because they had made statues of Amazons, when these were dedicated in the Temple of Artemis of Ephesus, it was agreed that the best one should be selected by the vote of the artists themselves who were present, and it then became evident that the best was the one which all the artists judged to be the next best after their own. This is the Amazon by Polycleitus, while next to it came that of Pheidias, third Cresilas's, fourth Cydon's ^a and fifth Phradmon's.

Pheidias, besides the Olympian Zeus, which nobody has ever rivalled, executed in ivory and gold ^{Pheidias § 49} the statue of Athene that stands erect in the Parthenon at Athens, and in bronze, besides the Amazon mentioned above, an Athene of such exquisite beauty that it has been surnamed the *Fau* ^b. He also made the *Lady* ^c with the Keys, and another Athene which Aemilius Paulus dedicated in Rome ^{167 B.C. ?} at the temple of Today's Fortune, and likewise a work consisting of two statues wearing cloaks which Catulus erected in the same temple, and another ^{101 B.C.} work, a colossal statue undraped, and Pheidias is deservedly deemed to have first revealed the capabilities and indicated the methods of statuary ^d.

^a Here perhaps all statuary as contrasted with painting, else all metal work only.

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- 55 Polychtus Sicyonius, Hageladae discipulus, diadumenum fecit molliter iuvenem, centum talentis nobilitatum, idem et doryphorum vixiliter puerum fecit et¹ quem canona artifices vocant liniamenta artis ex eo petentes veluti a lege quadam, solusque hominum autem ipsam fecisse artis opere iudicatur fecit et destringentem se et nudum telo² incessentem duosque pueros item nudos, talis ludentes, qui vocantur astiagalizontes et sunt in Titⁱ imperatoris atrio—quo³ opere nullum absolutius plerique iudicant,—item Mercurium qui fuit Lysimacheae,
- 56 Herculem, qui Romae, hagera⁴ arma sumentem, Artemona, qui periphoietos appellatus est hic consummasse hanc scientiam iudicatur et toieuticen sic erudisse, ut Phidias aperuisse proprium eius est, uno crure ut insisterent signa, excogitasse, quadrata tamen esse ea ait Varro et paene ad exemplum
- 57 Myronem Eleutheris natum, Hageladae et ipsum discipulum, bucula maxime nobilitavit celebratis

¹ *del et Urlichs puncto post puerum sublato*

² *telo Benndorf talo*

³ *quo cd Par 6801 hoc Ian duo hoc B om rell*

⁴ *hagera B agetera rell alexetera Hardown Anteaum e terra (om arma) ed vet*

^a Of Argos, says Plato (*Protag* 311c) But his family moved to Sicyon He cannot however have been a pupil of Hagelades (§ 49) Copies of Polycleitus' *Diadumenos* and of his *Doryphoros* are extant Pliny confuses the great Polycleitus with P the younger, likewise of Argos, who lived in the 4th century B C

^b We know however that this 'model statue' or 'standard' was the *Doryphoros* just mentioned

^c Or, 'in a single work embodied the principles of his art' P wrote a treatise on art called it *Kav.ón*, then made his

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Polycleitus of Sicyon,^a pupil of Hagelades, made a statue of the 'Diadumenos' or Binding his Hair—a youth, but soft-looking—famous for having cost 100 talents, and also the 'Doryphoros' or Carrying a Spear—a boy, but manly-looking. He also made what artists call a 'Canon' or Model Statue,^b as they draw their artistic outlines from it as from a sort of standard, and he alone of mankind is deemed by means of one work of art to have created the art itself.^c He also made the statue of the Man using a Body-scraper ('Apoxyomenos') and, in the nude, the Man Attacking with Spear, and the Two Boys Playing Dice, likewise in the nude, known by the Greek name of *Astragalizontes* and now standing in the fore-court of the Emperor Titus—this is generally considered to be the most perfect work of art in existence—and likewise the Hermes that was once at Lysimachea, Heracles, the Leader Donning his Armour, which is at Rome, and Artemon,^d called the Man in the Litter. Polycleitus is deemed to have perfected this science of statuary and to have refined the art of carving sculpture, just as Pheidias is considered to have revealed it. A discovery that was entirely his own is the art of making statues throwing their weight on one leg, although Varro says these figures are of a square build and almost all made on one model.

Myron, who was born at Eleutherae, was himself also a pupil of Hagelades, he was specially famous for his statue of a heifer, celebrated in some well-

Doryphoros on his own principles, and called the sculptured work also *Kανών*

^a A famous voluptuary (not the engineer of Pericles' time)

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- versibus laudata, quando alieno plerique ingenio magis quam suo commendantur fecit et Ladam¹ et discobolon et Peiseum et pristas² et Satyrum admirantem tibiās et Minervam, Delphicos pentathlos, pancratiastas, Herculem, qui est apud eum maximum in aede Pompei Magni fecisse et cicadae monumentum ac locustae carminibus suis
- 58 Erinna significat fecit et Apollinem, quem ab triumpho Antonio sublatum restituit Ephesus divus Augustus admonitus in quiete primus hic multiplicasse veritatem videtur, numerosior in arte quam Polyclitus et in³ symmetria diligentior, et ipse tamen corporum tenuis curiosus animi sensus non expressisse, capillum quoque et pubem non emendatius fecisse, quam rudis antiquitas instituisset
- 59 Vicit eum Pythagoras Reginus ex Italia pancratiaste Delphis posito, eodem vicit et Leontiscum fecit et stadiodromon Astylon, qui Olympiae ostenditur, et Libyn⁴ puerum tenentem tabellam⁵ eodem loco, et mala ferentem nudum, Syriacus autem claudicantem, cuius ulceris dolorem sentire etiam spectantes

¹ Ladam *Benndorf* canem ² pristas *Loschke*

³ et in *cdd* del et *Sillig*

⁴ Libyn *Hermolaus Barbarus* lybin *B* lipin aut lympin
aut iolpum rell ⁵ tabellam *B* tabellas rell

^a Ladas was a famous runner But the MSS give *canem* 'dog' Copies of Myron's *Discobolos* are extant

^b It is possible that Pliny wrote 'the Boxers'

^c Probably a group of Marsyas and Athene, of which copies exist

^d Experts in both boxing and wrestling

^e This absurd statement is caused by a confusion of *Μυράν* and a girl *Μυρώ* (*Anth Pal VII* 190—Myro makes a tomb for her pet insect)

^f For another interpretation see E Gardner, *Classical Review* II 69 ^g Leontiscos was an athlete, not an artist

known sets of verses—inasmuch as most men owe their reputation more to someone else's talent than to their own. His other works include Ladas^a and a 'Discobolos' or Man Throwing a Discus, and Perseus, and The Sawyers,^b and The Satyr Marvelling at the Flute and Athene,^c Competitors in the Five Bouts at Delphi, the All-round Fighters,^d the Heracles now in the house of Pompey the Great at the Circus Maximus. Erinna^e in her poems indicates that he even made a memorial statue of a tree-cricket and a locust. He also made an Apollo which was taken from the people of Ephesus by Antonius the Triumvir but restored to them by his late lamented Majesty Augustus in obedience to a warning given him in a dream. Myron is the first sculptor who appears to have enlarged the scope of realism, having more rhythms in his art than Polycleitus and being more careful in his proportions.^f Yet he himself so far as surface configuration goes attained great finish, but he does not seem to have given expression to the feelings of the mind, and moreover he has not treated the hand and the pubes with any more accuracy than had been achieved by the rude work of older days.

Myron was defeated by the Italian Pythagoras *Pythagoras of Rhegium* of Reggio with his All-round Fighter which stands at Delphi, with which he also defeated Leontiscus^g, Pythagoras also did the runner Astylos which is on show at Olympia, and, in the same place, the Libyan^h as a boy holding a tablet, and the nude Man Holding Apples, while at Syracuse there is his Lame Man, which actually makes people looking at it feel a pain from his ulcer in their own leg, and

^a Mnaseas of Cyrene Paus VI 13, 7, 18, 1

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videntur, item Apollinem serpentemque eius sagittis configi,¹ citharoedum, qui Dicaeus appellatus est, quod, cum Thebae ab Alexandro caperentur, aurum a fugiente conditum sinu eius celatum esset hic primus nervos et venas expressit capillumque diligentius

- 60 Fuit et alius Pythagoras Samius, initio pictor, cuius signa ad aedem Fortunae Huiusce Diei septem nuda et senis unum laudata sunt hic supra dicto facie quoque indiscreta similis fuisse traditur, Regini autem discipulus et filius sororis fuisse Sostratus
- 61 Lysippum Sicyonium Duri negat ullius fuisse discipulum, sed primo aetarium fabrum audendationem cepisse pictoris Eupompi responso eum enim interrogatum, quem sequeretur antecedentium, dixisse monstrata hominum multitudine, naturam
- 62 ipsam imitandam esse, non artificem plurima ex omnibus signa fecit, ut diximus, fecundissimae artis, inter quae destingentem se, quem M Agrippa ante Thermas suas dicavit, mne gratum Tiberio principi non quivit temperare sibi in eo, quamquam imperiosus sui inter initia principatus, transtulitque in cubiculum alio signo substituto, cum quidem tanta pop R

¹ configi *Ian* configit *B* confici *rell*

^a Named Cleon, a Theban poet Athenae I 19b

^b *I e* the statue afterwards restored the deposit entrusted to it

^c It is now known that he was the same as P of Reggio Paus VI 4, 3-4 shows that P of Reggio was the sculptor of the statue of Euthynos, but we have the basis of that statue, whereon P signs himself as 'Samian' He must therefore have migrated to Reggio

^d 'Apoxyomenos' The example in the Vatican is probably by a 3rd century artist

also Apollo shooting the Python with his Arrows, a Man ^a playing the Harp, that has the Greek name of The Honest Man ^b given it because when Alexander took Thebes a fugitive successfully hid ^{355 B C} in its bosom a sum of gold Pythagoras of Reggio was the first sculptor to show the sinews and veins, and to represent the hair more carefully

There was also another ^c Pythagoras, a Samian, *Pythagoras of Samos* who began as a painter, his seven nude statues now at the temple of To-day's Fortune and one of an old man are highly spoken of He is recorded to have resembled the above mentioned Pythagoras so closely that even their features were indistinguishable, but we are told that Sostratus was a pupil of Pythagoras of Reggio and a son of this Pythagoras' sister

Lysippus of Sicyon is said by Duris not to have *Lysippus* been the pupil of anybody, but to have been originally a copper-smith and to have first got the idea of venturing on sculpture from the reply given by the painter Eupompus when asked which of his predecessors he took for his model, he pointed to a crowd of people and said that it was Nature herself, not an artist, whom one ought to imitate Lysippus as we have said was a most prolific artist and made more ^{§ 37} statues than any other sculptor, among them the Man using a Body-scraper ^d which Marcus Agrippa gave to be set up in front of his Warm Baths and of which the emperor Tiberius was remarkably fond ^{A D 14-37} Tiberius, although at the beginning of his principate he kept some control of himself, in this case could not resist the temptation, and had the statue removed to his bedchamber, putting another one in its place at the baths, but the public were so

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contumacia fuit, ut theatri clamoribus reponi apoxyomenon flagitaverit princepsque, quamquam adamatum, reposuerit nobilitatur Lysippus et temulentia
 63 tibicina et canibus ac venatione, in primis vero quadriga cum Sole Rhodiorum fecit et Alexandrum Magnum multis operibus, a pueritia eius orsus, quam statuam inaurari iussit Nero princeps delectatus admodum illa, dein, cum pretio perisset gratia artis, detractum est aurum, pretiosiorque talis existimabatur¹ etiam cicatricibus operis atque concisuris,
 64 in quibus aurum haeserat,² remanentibus idem fecit Hephaestionem, Alexandri Magni amicum, quem quidam Polychto adscribant, cum is centum prope annis ante fuerit, item Alexandri venationem, quae Delphis sacrata est, Athenis Satyrum, tuum Alexandri, in qua amicorum eius imagines summa omnium similitudine expressit, hanc Metellus Macedonia subacta transtulit Romam fecit et
 65 quadrigas multorum generum statuarum arti plurimum traditum contulisse, capillum exprimendo, capita minora faciendo quam antiqui, corpora graciliora siccioraque, per quae proceritas signorum maior videretur non habet Latinum nomen sym-

¹ *Vl* existimatur

² fuerat *B* haeserat *rell*

^a With the head encircled with rays

^b This would be right, perhaps, if they meant the younger P, unknown to Pliny

^c Twenty five officers who fell in the Battle of the Granicus
 Vellei Patere, I 11, 3

obstinately opposed to this that they raised an outcry at the theatre, shouting "Give us back the '*Apoxyomenos*'"—Man using a Body-scraper—and the Emperor, although he had fallen quite in love with the statue, had to restore it. Lysippus is also famous for his Topsy Turvy playing the Flute, and his Hounds and Huntsmen in Pursuit of Game, but most of all for his Chariot with the Sun belonging to Rhodes.^a He also executed a series of statues of Alexander the Great, beginning with one in Alexander's boyhood. The emperor Nero was so delighted by this statue of the young Alexander that he ordered it to be gilt, but this addition to its money value so diminished its artistic attraction that afterwards the gold was removed, and in that condition the statue was considered yet more valuable, even though still retaining scars from the work done on it and incisions in which the gold had been fastened. The same sculptor did Alexander the Great's friend Hephaestio, a statue which some people ascribe to Polycleitus,^b although his date is about a hundred years earlier, and also Alexander's Hunt, dedicated at Delphi, a Satyr now at Athens, and Alexander's Squadron of Horse, in which the sculptor introduced portraits of Alexander's friends^c consummately lifelike in every case. After the conquest of Macedonia this was removed to Rome by Metellus,^d he also executed Four-horse Chariots of various kinds. Lysippus is said to have contributed greatly to the art of bronze statuary by representing the details of the hair and by making his heads smaller than the old sculptors used to do, and his bodies more slender and firm, to give his statues the appearance of greater height. He scrupulously

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metua, quam diligentissime custodit ¹ nova intacta-
que ratione quadriatas veterum statuas permutando,
vulgoque dicebat ab illis factos quales essent homines,
a se quales viderentur esse propriae huius videntur
esse argutiae operum custoditae in minimis quoque
rebus

- 66 Filios et discipulos reliquit laudatos artifices
Laippum,² Boedan, sed ante omnes Euthyciaten,
quamquam is constantiam potius imitatus patris
quam elegantiam austero maluit genere quam
iucundo placere itaque optume expressit Herculem
Delphis et Alexandrum Thespius venatorem et
Thespiadas,³ proelium equestre, simulacrum ipsum
Trophoni ad oraculum, quadrigas complures, equum ⁴
67 cum fuscinis,⁵ canes venantium huius porro disci-
pulus fuit Tisicrates, et ipse Sicyonius, sed Lysippi
sectae propior, ut vix discernantur complura signa,
ceu senex Thebanus et Demetrius rex, Peucestes,
Alexandri Magni servator, dignus tanta gloria
68 Artifices, qui compositis voluminibus condidere
haec, miris laudibus celebrant Telephanen Pho-

¹ custodit *Mayhoff* custodit aut custodivit *cdl*

² Dahippum *Hardoun*

³ et Thespiadas *cd Par Lat 6797 om thespiadas B*
om et cd Leid Voss, cd Flor Ricc et thespiadum cd Par
6801

⁴ equitem *coni T B L Webster* ⁵ fuscinis *B* fuscinis *rell*

^a See note on Laippus in § 51

^b Or 'his Heracles made for Delphi, and his Alexander
Hunting, and his Thespiades (these two made for Thespiæ)'
The Thespiades were the Muses

^c All MSS except one give *fuscinis*, 'with Two pronged
Spears'

preserved the quality of 'symmetry' (for which there is no word in Latin) by the new and hitherto untried method of modifying the squareness of the figure of the old sculptors, and he used commonly to say that whereas his predecessors had made men as they really were, he made them as they appeared to be. A peculiarity of this sculptor's work seems to be the minute finish maintained in even the smallest details.

Lysippus left three sons who were his pupils, the celebrated artists Laippus,^a Boedas and Euthycrates, the last pre-eminent, although he copied the harmony rather than the elegance of his father, preferring to win favour in the severely correct more than in the agreeable style. Accordingly his Heracles, at Delphi, and his Alexander Hunting, at Thespieae, his group of Thespiades,^b and his Cavalry in Action are works of extreme finish, and so are his statue of Trophonius at the oracular shrine of that deity, a number of Four-horse Chariots, a Horse with Baskets^c and a Pack of Hounds. Moreover Tisicrates, another native of Sicyon, was a pupil of Euthycrates, but closer to the school of Lysippus—indeed many of his statues cannot be distinguished from Lysippus's work, for instance his Old Man of Thebes, his King Demetrius (Polioictes), and his Peucestes, the man who saved the life of Alexander the Great and so deserved the honour of this commemoration.

Artists^d who have composed treatises recording these matters speak with marvellously high praise of Telephanes of Phocis, who is otherwise unknown,

^a Pliny means the writers Xenocrates of Sicyon and Antigonus of Carystus, from whom, through Varro, much of Pliny's material about art comes

caelum, ignotum alias, quoniam¹ Thessaliae² habitaverit et ibi opera eius latuerint, alioqui suffragis ipsorum aequatum Polychito, Myion, Pythagorae laudant eius Lausam et Spintharum pentathlum et Apollinem alii non hanc ignobilitatis fuisse causam, sed quod se regum Xerxis atque Dairei officinis dederint, existimant

- 69 Plianteles quoque, qui³ marmore felicioi, ideo et clarior fuit, fecit tamen et ex aere pulcherrima opera Proserpinae raptum, item catagusam et Liberum patiem Ebrietatem nobilemque una Satyrum, quem Graeci periboeton cognominant, et signa, quae ante Felicitatis aedem fuere, Veneremque, quae ipsa aedis incendio cremata est Claudii principatu, marmoreae illi suae per teras inclutae parem,
70 item stephanusam,⁴ pselumenen,⁵ Oporan,⁶ Harmodium et Aristogitonem tyrannicidas, quos a Xerxe Persarum rege captos victa Perside Atheniensibus remisit Magnus Alexander fecit et puberem Apollinem subiepti lacertae comminus sagitta

¹ lac C F W Muller

² thessaliae B in thessalia rell

³ qui add Mayhoff

⁴ Fortasse <se> stephanusam vel stephanusam <se>

⁵ pselumenen Urlichs, O Jahn pselumenen cd Leud
I oss varia rell

⁶ Oporan cd Flor Ricc varia rell (oporum cd Par 6801) oenophorum edd vett canephoram Urlichs (immo canephorum)

^a Καταγούσα, from καταγω 'draw down,' 'spin'

^b The wreath would be one bestowed on an athlete by the city (personified) when he won his victory, pselumene is from ψελιῶν, and ψέλιον means an armlet

^c Not the actual tyrant Hippias but his brother and assistant Hipparchus, at Athens, 514-13 B C

since he lived at in Thessaly where his works have remained in concealment, although these writers' own testimony puts him on a level with Polycleitus, Myron and Pythagoras. They praise his Larisa, his Spintharus the Five-bout Champion, and his Apollo. Others however are of opinion that the cause of his lack of celebrity is not the reason mentioned but his having devoted himself entirely to the studios established by King Xerxes and King Darius.

Praxiteles although more successful and therefore more celebrated in marble, nevertheless also made some very beautiful works in bronze: the Rape of Persephone, also The Girl Spinning,^a and a Father Liber or Dionysus, with a figure of Drunkenness and also the famous Satyr, known by the Greek title Periboetos meaning 'Celebrated,' and the statues that used to be in front of the Temple of Happiness, and the Aphrodite, which was destroyed by fire when the temple of that goddess was burnt down in the reign of Claudius, and which rivalled the famous Aphrodite, in marble, that is known all over the world, also A Woman Bestowing a Wreath, A Woman Putting a Bracelet on her Arm,^b Autumn, Harmodius and Aristogeiton who slew the tyrant^c—the last piece^d carried off by Xerxes King of the Persians but restored to the Athenians by Alexander the Great after his conquest of Persia. Praxiteles also made a youthful Apollo called in Greek the Lizard-Slayer^e because he is waiting with an arrow

Praxiteles
fl c 370 B C

A D 41-51.

480 B C

331 B C

^a But the group carried off was by Antenor, and its restoration is attributed also to Seleucus I, and to Antiochus I. See note on pp 256-257

^e Degenerate copies of this still exist

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- insidiantem, quem sauioc-tonon vocant spectantui et duo signa eius diuersos adfectus exprimentia, flentis mationae et mereticis gaudentis hanc putant Phynen fuisse deprehenduntque in ea amorem artificis et mercedem in vultu mereticis
- 71 habet simulacrum et benignitas eius, Calamidis enim quadrigae aurigam suam inposuit, ne melior in equorum effigie defecisse in homine crederetur ipse Calamis et alias quadrigas bigasque fecit equis semper ¹ sine aemulo expressis, sed, ne videatur in hominum effigie inferior, Alcmena ² nullus est nobilior
- 72 Alcmenes, Phidiae discipulus, et marmorea fecit, sed aereum pentathlum, qui vocatur encrinomenos, at Polychiti discipulus Aristides quadrigas bigasque Amphicrates ³ Leaena laudatur scortum haec, lyrae cantu familiaris Harmodio et Aristogitoni consilia eorum de tyrannicidio usque in mortem excruciat a tyrannis non prodidit, quam ob rem Athenienses, et honorem habere ei volentes nec tamen scortum celebrasse, animal nominis eius fecere atque, ut intellexeretur causa honoris, in opere linguam addi ab artifice vetuerunt

¹ equis semper *add* (señ pari equis B) se impari, equis Traube

² alcmena *cd* *deperd ap Dalecamp* Achamene *edd vet* Alcman poeta *Eugene Sellers* alchimena *aut alcom* *add* (alcamenet B¹ me et B²)

³ iphicrates *cd* Par 6801 Tisicratis *Hardoun*

^a Or, 'received by her' The exact meaning is not clear

^b Or perhaps 'Undergoing the test' for recognition as an athlete

^c Hippias and Thessalus of Athens after the killing of their brother, 514-13 B C, cf § 70 above, and note

for a lizard creeping towards him. Also two of his statues expressing opposite emotions are admired, his Mation Weeping and his Merry Courtesan. The latter is believed to have been Phryne and connoisseurs detect in the figure the artist's love of her and the reward promised him^a by the expression on the courtesan's face. The kindness also of Praxiteles is represented in sculpture, as in the Chariot and, Four of Calamis he contributed the charioteer, in order that the sculptor might not be thought to have failed in the human figure although more successful in representing horses. Calamis himself also made other chariots, some with four horses and some with two, and in executing the horses he is invariably unrivalled. but—that it may not be supposed that he was inferior in his human figures—his Alcmena is as famous as that of any other sculptor.

Calamis

Alcamenes a pupil of Pheidias made marble figures, and also in bronze a Winner of the Five Bouts, known by the Greek term meaning Highly Commended,^b but Polycleitus's pupil Aristides made four-horse and pan-horse chariots. Amphicrates is praised for his Leaena, she was a harlot, admitted to the friendship of Harmodius and Aristogeiton because of her skill as a harpist, who though put to the torture by the tyrants^c till she died refused to betray their plot to assassinate them. Consequently the Athenians wishing to do her honour and yet unwilling to have made a harlot famous, had a statue made of a lioness, as that was her name, and to indicate the reason for the honour paid her instructed the artist to represent the animal as having no tongue.

*Alcamenes**Amphicrates*

PLINY NATURAL HISTORY

- 73 Bryonis Aesculapium et Seleucum ¹ fecit Boedas
adorantem, Baton Apollinæm et Iunonem, qui sunt
74 Romæ in Concordiæ templo, Ctesilas ² volneratum
deficientem in quo possit intellegi quantum restet
animæ, et Olympium Periclen dignum cognomine,
mirumque in hac arte est quod nobiles viros nobiliores
fecit Cephisodorus ³ Minervam mirabilem in portu
Atheniensium et aiām ad templum Iovis Servitoris
in eodem portu, cui pauca comparantur, Canachus
75 Apollinem nudum, qui Philesius cognominatus, in
Didymæo Aeginetici aeris temperatura cervumque
una ita vestigis suspendit, ut linum ⁴ subter pedes
trahatur alteino morsu calce digitisque retinentibus
solum, ita vertebrato ungue ⁵ utrisque in partibus,
ut a repulso per vices resiliat idem et celetizontas
pueros, Chaereas Alexandrum Magnum et Philip-
pum patrem eius fecit, Ctesilaus doxyphoron et
76 Amazonem volneratam, Demetrius Lysimachen,
quæ sacerdos Minervæ fuit LXIII annis, idem et
Minervam, quæ mycetica ⁶ appellatur—dracones ⁷
in Gorgone eius ad ictus citharæ tinnitu resonant,—

¹ Salutem *Hardoun*

² ctesilas *cd* Leid Ioss Ctesilaus *Hardoun*

³ Cephisodorus *Hardoun*

⁴ ut initum *B*

⁵ ungue aut pede aut vertebrata ungula *Warmington*
dente

⁶ mycetica *Traube* myctica *Ian* mystica *Frohner*
myetica *B* musica *rell*

⁷ dracones *B* quoniam dracones *rell*

^a Probably Seleucus I, King 312–280 B C

^b 'Olympian,' 'High and Mighty,' as Pericles himself was called during his lifetime. Copies of this, and the basis of the original still exist

Bryaxis made statues of Asclepius and Seleucus,^a *Other famous sculptors* Boedas a Man Praying, Baton an Apollo and a Heia both now in the Temple of Concord at Rome Ctesilas did a Man Fainting from Wounds the expression of which indicates how little life remains, and the Olympian Peicles, a figure worthy of its title^b, indeed it is a marvellous thing about the art of sculpture that it has added celebrity to men already celebrated Cephisodorus made the wonderful Athene at the harbour of Athens and the almost unrivalled altar at the temple of Zeus the Deliverer at the same harbour, Canachus the naked Apollo, surnamed Philesius, at Didyma, made of bronze compounded at Aegina^c, and with it he made a stag so lightly poised in its footprints as to allow of a thread being passed underneath its feet, the 'heel' and the 'toes' holding to the base with alternate contacts, the whole hoof being so jointed in either part that it springs back from the impact alternately^d He also made a Boys Riding on Race-horses Chæreas did Alexander the Great and his father Philip, Ctesilaus a Man with a Spear and a Wounded Amazon, Demetrius Lysimache who was a priestess of Athene for 64 years, and also the Athene called the Murmuring Athene^e—the dragons on her Gorgons head sound with a tinkling note when a harp is struck, he likewise did

^a Or, 'compounded on the Aeginetan formula' Cf § 10

^b Pliny is not clear, the MSS reading *dente* ('tooth' not 'ivory'?) is altered here to *ungue* by conjecture Perhaps he simply means that when the figure was locked to and fro, a thread could be slipped under two feet From coins we know that the small stag was not on the ground but on the god's hand

^c The right reading is unknown

- idem equitem Simonem, qui primus de equitatu
scripsit Daedalus, et ipse inter fictores laudatus,
pueros duos destringentes se fecit, Dinomenes
77 Protesilaum et Pythodenum luctatorem Euphia-
nois Alexander Paris est, in quo laudatus quod
omnia simul intellegantur, iudex dearum, amator
Helenae et tamen Achilles interfector huius est
Minerva, Romae quae dicitur Catuliana,¹ infra
Capitolium a Q Lutatia dicata, et simulacrum Boni
Eventus, dextra pateram, sinistra spicam ac papa-
vera tenens, item Latona puerpera Apollinem et
Dianam infantes sustinens in aede Concordiae
78 fecit et quadrigas bigasque et chiduchon² eximia
forma et Virtutem et Graeciam, utrasque colossaeas,
mulherem admittentem et adorantem, item Alexan-
dram et Philippum in quadrigis, Eutychides Euro-
tam, in quo artem ipso amne liquidiorum plurimum
divine Hegiae Minerva Pyriusque rex laudatur
et celestizantes pueri et Castor ac Pollux ante aedem
Iovis Tonantis, Hagesiae in Paro colonia Hercules,
79 Isidori³ buthytes⁴ Lycius Myronis discipulus fuit,
qui fecit dignum praeceptore puerum sufflantem
languidos ignes et Argonautas, Leochares aquilam
sentientem, quid rapiat in Ganymede et cui ferat,

¹ Catulina *Manutius*

² chiduchon *Hermelaus Barbarus* cliticon *B* cliticum *rell*

³ *¶ l* Isidori

⁴ Buthytes *B* Buthyres *rell* Eleuthereus *Hardoun*

^a In Greek 'Αγαθή Τύχη But it appears that the statue
was one of Triptolemus re named as a Roman rustic divinity

^b Cf § 54

^c The river on which Sparta stood

^d c 318-272 B C But perhaps *rex*, king, should be deleted

^e Parium was made a Roman colony by Augustus

the mounted statue of Simon who wrote the first treatise on horsemanship. Dædalus (also famous as a modeller in clay) made Two Boys using a Body-Scraper, and Dinomenes did a Protesilaus and the wrestler Pythodemus. The statue of Alexander Paris is by Euphranor, it is praised because it conveys all the characteristics of Paris in combination—the judge of the goddesses, the lover of Helen and yet the slayer of Achilles. The Athene, called at Rome the Catuliana, which stands below the Capitol and was dedicated by Quintus Lutatius 78 B C Catulus, is Euphranor's, and so is the figure of Success,^a holding a dish in the right hand and in the left an ear of corn and some poppies, and also in the temple of Concord a Leto as Nursing Mother, with the infants Apollo and Artemis in her arms. He also made four-horse and two-horse chariots, and an exceptionally beautiful Lady with the Keys,^b and two colossal statues, one of Virtue and one of Greece, a Woman Wondering and Worshipping, and also an Alexander and a Philip in four-horse chariots. Eutychides did a Eurotas,^c in which it has frequently been said that the work of the artist seems clearer than the water of the real river. The Athene and the King Pyrius^d of Hegias are praised, and his Boys Riding on Race-horses, and his Castor and Pollux that stand before the temple of Jupiter the Thunderer, and so are Hagesias's Heracles in our colony^e of Parium, and Isidotus's Man Sacrificing an Ox. Lycius who was a pupil of Myron did a Boy Blowing a Dying Fire that is worthy of his instructor, also a group of the Argonauts, Leochares an Eagle carrying off Ganymede in which the bird is aware of what his burden is and for whom he is

PLINY NATURAL HISTORY

parcentemque unguibus etiam per vestem pueri,¹
 Autolycum panciati² victorem, propter quem
 Xenophon symposium scripsit, Iovemque illum
 Tonantem in Capitolio ante cuncta laudabilem, item
 Apollinem diadematum, Lyciscum,³ mangonem,⁴
 puerum subdolae ac fucatae vernitatis, Lycius
 80 et ipse puerum suffitoiem Menaechmi vitulus
 genu premitui replicata cervice ipse Menaechmus
 scripsit de sua arte Naucydes Mercurio et dis-
 cobolo et immolante arietem censetui, Naucerius⁵
 luctatoie anhelante,⁶ Niceratus Aesculapio et
 Hygia,⁷ qui sunt in Concordiae templo Romae
 Pyromachi quadriga ab Alcibiade regitui Polycles
 Heimaphioditum nobilem fecit, Pyrrhus Hygiam
 81 et Mineivam, Phanis, Lysippi discipulus, epithyu-
 san Stippa\ Cyprius uno celebratu signo,
 splachnopte, Perichs Olympi vernula hic fuit
 exta torrens ignemque ovis pleni spiritu accendens
 Silanion Apollodorum fudit, fictoie et ipsum, sed
 inter cunctos diligentissimum artis et iniquum
 sui iudicem, crebro perfecta signa frangentem,
 dum satiari cupiditate artis non quit, ideoque
 82 insanum cognominatum—hoc in eo expressit, nec

¹ pueri *B* puerum *rell*

pancrati *B* pancratio *rell*

³ lyciscum *B* luciscus *rell* Lyciscus *Gelen*

⁴ mangonem *B* langonem *vel* lagonem *rell*

⁵ Naucerius *con* Hardoun

⁶ *Vl* luctatorem anhelantem (fecit *add edd vett*)

⁷ Aesculapio et Hygia *con* *Ian* aesculapium et hygiam
aut a h cdd Hygiam fecit *Detlefsen*

^a The banquet described in Xenophon's *Symposium* was given by Callias in honour of Autolycus's victory in the pentathlon at the Great Panathenaea in 422 B C

^b See § 74, note

carrying it, and is careful not to let his claws hurt the boy even through his clothes, and Autolycus Winner of the All-round Bout, being also the athlete in whose honour Xenophon wrote his *Banquet*,^a and the famous Zeus the Thunderer now on the Capitol, of quite unrivalled merit, also an Apollo crowned with a Diadem, also Lyciscus, the Slave-dealer, and a Boy, with the crafty cinging look of a household slave. Lycius also did a Boy Burning Perfumes. There is a Bull-calf by Menæchmus, on which a man is pressing his knee as he bends its neck back, Menæchmus has written a treatise about his own work. The reputation of Naucydes rests on his Hermes and Man throwing a Disc and Man Sacrificing a Ram, that of Naucerus on his Wrestler Winded, that of Niceiatus on his Asclepius and his Goddess of Health, which are in the Temple of Concord at Rome. Pyromachus has an Alcibiades Driving a Chariot and Four, Polycles made a famous Heimaphrodite, Pyrrhus, a Goddess of Health and an Athene, Phanis, who was a pupil of Lysippus, a Woman Sacrificing. Styppax of Cyprius is known for a single statue, his Man Cooking Tripe, which represented a domestic slave of the Olympian.^b Pericles roasting inwards and puffing out his cheeks as he kindles the fire with his breath, Silanion cast a metal figure of Apollodorus, who was himself a modeller, and indeed one of quite unrivalled devotion to the art and a severe critic of his own work, who often broke his statues in pieces after he had finished them, his intense passion for his art making him unable to be satisfied, and consequently he was given the surname of the Madman—this quality he brought out in his statue, the Madman, which

- hominem ex aere fecit, sed uacundiam—et Achillem
 •obilem, item epistaten exaercentem athletas, Stron-
 gylion Amazonem, quam ab excellentia ciuium
 eucnemon appellant, ob id in comitatu Neionis
 principis cucumlatam idem fecit puerum, quem
 amando Brutus Philippiensis cognomine suo inlus-
 83 travit Theodorus, qui labyrinthum fecit Sami,
 ipse se ex aere fudit praeter similitudinis mira-
 bilem famam ¹ magna supilitate celebratur ² dextera
 lnam tenet, laeva tribus digitis quadrigulam
 tenuit, tralatam Praeneste paruitatis ³ ut miraculum ⁴
 pictam ⁵ eam curiumque et auigam integeret alis
 simul facta musca Xenociates, Tisicratis discipulus,
 ut alii, Euthycratis, vicit utrosque copia signorum
 et de sua arte composuit volumina
 84 Plures artifices fecere Attali et Eumenis aduersus
 Gallos proelia, Isigonus, Pyromachus, Stratonicus,
 Antigonus qui volumina condidit de sua arte
 Boethi, quamquam argento melioris, infans amplex-
 ando ⁶ anserem strangulat atque ex omnibus, quae
 rettuli, clarissima quaeque in urbe iam sunt dicata a

¹ similitudinis mirabilem famam *B* similitudinem fama
rell s nobilem *f ed l vett*

² celebratur *J Muller* celebratus

³ paruitatis *B* tantae *p rell*

⁴ miraculū *Mayhoff* ut miraculo *B (om miraculo rell)* ut
 mirum dictu *Traube del ut Ulrichs*

⁵ pictam *B* totam *rell* fictam *Stuart Jones* pictam ut
Ulrichs

⁶ amplexando *Traube* annosum (*olim vi annisus*)
Buecheler vi annosum *Meister* vi *Külb* vi aenum *Borsaco*
 ex aere *H Stein* sexennis *O Jahn* ex animo *Ian* ulnis
Ulrichs eximū *Mayhoff* sex anno *B* sex annis *B-* eximie
 aut eximie *rell*

represented in bronze not a human being but angel personified Silanion also made a famous Achilles, and also a Superintendent Exercising Athletes, Strongylion made an Amazon, which from the remarkable beauty of the legs is called the Eucnemon, and which consequently the emperor Nero caused to be carried in his retinue on his journeys The same sculptor made the figure rendered famous by Brutus under the name of Brutus's Boy because it represented a favourite of the hero of the battles at Philippi Theodorus, who constructed the Labyrinth^a at Samos, cast a statue of himself in bronze Besides its remarkable celebrity as a likeness, it is famous for its very minute workmanship, the right hand holds a file, and three fingers of the left hand originally held a little model of a chariot and four, but this has been taken away to Palestrina as a marvel of smallness if the team were reproduced in a picture with the chariot and the charioteer, the model of a fly, which was made by the artist at the same time, would cover it with its wings Xenocrates, who was a pupil of Tisicrates, or by other accounts of Euthykrates, surpassed both of the last mentioned in the number of his statues, and he also wrote books about his art

Several artists have represented the battles of Attalus^b and Eumenes against the Gauls, Isigonus, Pyromachus, Stratonicus and Antigonus, who wrote books about his art Boethus did a Child^c Strangling a Goose by hugging it, although he is better in silver And among the list of works I have referred to all the most celebrated have now been dedicated by the

^b Attalus I of Pergamum, who dealt with Gallic invaders of Asia Minor between 240 and 232 B C ^c Copies exist

PLINY NATURAL HISTORY

Vespasiano principe in templo Pacis aliisque eius
 operibus, violentia Neronis in urbem convecta et in
 sellanus domus aureae disposita

85 Praeterea sunt aequalitate celebrati artifices, sed
 nullis operum suorum praecipui, Ariston, qui et
 argentum caelare solitus est, Callides,¹ Ctesias,
 Cantharus Sicyonius, Dionysius, Diodorus² Critiae
 discipulus, Delades, Euphron Eunicus et Heca-
 taeus, argenti caelatores, Lesbocles, Prodorus,
 Pythodiscus, Polygnotus, idem pictor e nobilissimis,³
 item e caelatoribus Stratonicus, Scymnus Critiae
 discipulus

86 Nunc percensebo eos, qui eiusdem generis opera fe-
 cerunt, ut Apollodorus, Andriobulus, Asclepiodorus,
 Aleuas philosophos, Apellas et adorantes⁴ se⁵
 feminas, Antignotus et [luctatores,]⁶ perixyomenum,
 tyrannicidasque supra dictos Antimachus, Atheno-
 dorus feminas nobiles, Aristodemus et luctatores
 bigasque cum auriga, philosophos, anas, Seleucum
 regem habet gratiam suam huius quoque doxy-
 phorus Cephisodoti duo fuerint priores est Mei-
 curius Liberum patrem in infantia nutriens, fecit et
 contionantem manu elata—persona in incerto est,
 sequens philosophos fecit Colotes, qui cum Phidia
 Iovem Olympium fecerat, philosophos, item Cleon

¹ callases *cd Par* 6801 Calheles *Urlichs* Callhades
Hardouin

- Dionysius, Diodorus *Detlefsen* diodorus *B* dionysio
 dorus *aut* dionysodorus *rell*

³ *l l* idem pictores nobilissimi ⁴ *V l* adorantes

⁵ *se cd Leid Voss om rell*

⁶ *et luctatores cdd om luctatores B, cd Par Lat* 6797

emperor Vespasian in the Temple of Peace and his AD 70 other public buildings, they had been looted by Nero, who conveyed them all to Rome and arranged them in the sitting-rooms of his Golden Mansion

Besides these, artists on the same level of merit but of no outstanding excellence in any of their works are Ariston, who often also practised chasing silver, Callides, Ctesias, Cantharus of Sicyon, Dionysius, Diodorus the pupil of Cirtias, Delades, Euphion, Eunicus and Hecataeus the silver chasers, Lesbocles, Prodorus, Pythodocus, Polygnotus, who was also one of the most famous among painters, similarly Stratonicus among chasers, and Cirtias's pupil Scymnus

I will now run through the artists who have made works of the same class, such as Apollodorus, Androbulus and Asclepiodorus, Aleuas, who have done philosophers, and Apellas also women donning their ornaments, and Antignotus also Man using a Body-scraper and the Men^a that Slew the Tyrant, above-mentioned, Antimachus, Athenodorus who made splendid figures of women, Aristodemus who also did Wrestlers, and Chariot and Pair with Driver, figures of philosophers, of old women, and King Seleucus, Aristodemus's Man holding Spear is also popular. There were two artists named Cephisodotus, the Hermes Nursing Father Liber or Dionysos when an Infant belongs to the elder, who also did a Man Haranguing with Hand Uplifted—whom it represents is uncertain. The later Cephisodotus did philosophers. Colotes who had co-operated with Pheidias in the Olympian §§ 49, 54 Zeus made statues of philosophers, as also did Cleon

^a Harmodius and Aristogeiton See §§ 70, 72

PLINY NATURAL HISTORY

- et Cenchramis ¹ et Callicles et Cepis, Chalcosthenes ²
 et comoedos et athletas, Daippus perixyomenon,
 Daiphion et Damocritus et Daemon philosophos
 88 Epigonus omnia fere praedicta imitatus praecessit
 in tubicinis et matris interfectae infante miserabiliter
 blandiente Eubuli mulieris admirans laudatur, Eu-
 bulidis digitis computans Micon athletis spectatur,
 Menogenes quadrigis Nec minus Niceratus omnia,
 quae ceteri, adgressus repraesentavit Alcibiaden
 lampademque accensu materiam eius Demaraten
 89 sacrificantem Tisicratis bigae Piston mulierem
 inposuit, idem fecit Martem et Mercurium, qui sunt
 in Concordiae templo Romae Perillum nemo
 laudet saevior Phalaide tyranno, cui taurum
 fecit mugitus inclusi ³ hominis pollicitus igni subdito
 et ⁴ primus expertus cruciatum eum iustiore saevitia
 huc a simulacris deorum hominumque devocaverat
 humanissimam artem ideo tot conditores eius
 laboraverant, ut ex ea tormenta fierent ¹ itaque una
 de causa servantur opera eius, ut quisquis illa videat,
 90 oderit manus Sthenis Cererem, Iovem, Minervam
 fecit, qui sunt Romae in Concordiae templo, idem

¹ Cenchramus *Overbeck*

² calcosthenes *B* Caecosthenes (=Καικοσθενης) *Overbeck*

³ inclusi *add Mayhoff*

⁴ et *B* vll ex, est exprimere *Detlefsen*

¹ This should be Dinomache

and Cenchiamis and Calicles and Cepis, Chalcosthenes also did actors in comedy and athletes, Daippus a Man using a Scrapper, Daiphion Damocritus and Dæmon statues of philosophers Epigonus, who copied others in almost all the subjects already mentioned, took the lead with his Trumpet-player and his Weeping Infant pitifully caressing its Murdered Mother Praise is given to Eubulus's Woman in Admiration and to Eubulides's Person Counting on the Fingers Micon is noticed for his athletes and Menogenes for his chariots and four Niceratus, who likewise attempted all the subjects employed by any other sculptor, did a statue of Alcibiades and one of his mother Demarate,^a represented as performing a sacrifice by torch-light Tisicrates did a pan-horse chariot in which Piston afterwards placed a woman, the latter also made an Ares and a Hermes now in the Temple of Concord at Rome No one should praise Perillus, who was more cruel than the tyrant Phalaris, for whom he made a bull, guaranteeing that if a man were shut up inside it and a fire lit underneath the man would do the bellowing, and he was himself the first to experience this torture—a cruelty more just than the one he proposed Such were the depths to which the sculptor had diverted this most humane of arts from images of gods and men! All the founders of the art had only toiled so that it should be employed for making implements of torture! Consequently this sculptor's works are preserved for one purpose only, so that whoever sees them may hate the hands that made them Sthenius did a Demeter, a Zeus and an Athene that are in the Temple of Concord at Rome, and also Weeping

- fientes nationas et adorantes sacrificantesque
 - Simon canem et sagittarium fecit, Stratoniceus
 91 caelator ille philosophos, copas¹ uterque,² athletas
 autem et armatos et venatores sacrificantesque Baton,
 Euchin, Glaucides, Heliodorus, Hicanus, Iophon,³
 Lyson, Leon, Menodorus, Myagius, Polycrates,
 Polvidus,⁴ Pythocritus, Protogenes, idem pictor e
 clarissimis, ut dicemus, Patrocles,⁵ Pollis, Posidonius,
 qui et argentum caelavit nobilitate, natione Ephesius,
 Periclymenus, Philon, Symenus, Timotheus, Theom-
 nestus, Timarchides, Timon, Tisias, Thiason
 92 Ex omnibus autem maxime cognomine insignis est
 Callimachus, semper calumniator sui nec finem
 habentis diligentiae, ob id catatechneus appel-
 litus, memorabili⁶ exemplo adhibendi et curiae
 modum huius sunt saltantes Lacaenae, emendatum
 opus, sed in quo gratiam omnem diligentia abstulerit
 hunc quidem et pictorem fuisse tradunt non aere
 captus nec aere, unam tantum Zenonis statuam
 Cypria expeditione non vendidit Cato, sed quia
 philosophi erat, ut obiter hoc quoque noscatur tam
 insigne⁷ exemplum
 93 In mentione statuarum est et una non praeter-

¹ copas *Gerhard* scopas

² uterque *edd* (utrosque *B*¹, utraque *B*²) utrasque *edd*
vett

³ Iophon *Urlichs* Leophon *Sillig* Herophon *Loeury*
 olophon *B* lophon *rell*

⁴ Polydorus *Hermolaus Barbarus*

⁵ Patroclus *con* *Sillig coll* § 50

⁶ memorabili *B*, *cd* *Par* 6801 memorabilis *rell*

⁷ insigne *Pintianus* inane

^a The doubtful text may contain the name Scopas, see critical notes

^b *κατατηξίτεχνος* one who wastes his skill in dribblets

Matrons and Matrons at Prayer and Offering a Sacrifice Simon made a Dog and an Aichei, the famous engraver Stratoniceus some philosophers and each of these artists made figures of hostesses of inns ^a The following have made figures of athletes, armed men, hunters and men offering sacrifice Baton, Euchir, Glaucides, Heliodorus, Hicanus, Iophon, Lyson, Leon, Menodorus, Myagrus, Polycrates, Polyidus, Pythocritus, Protogenes (who was also, as we shall say later, one of the most famous painters), Patrocles, Pollis and Posidonius (the last also a distinguished silver chaser, native of Ephesus), Peisiclymenus, Philo, Symenus, Timotheus, Theomnestus, Timarchides, Timon, Tisias, Thiaso xxxv 101
sqq

But of all Callimachus is the most remarkable, because of the surname attached to him he was always unfavourably critical of his own work, and was an artist of ^{flor c 400} ^{B C} assiduity, and consequently he was ^b and is a notable warning of the duty of observing moderation even in taking pains To him belongs the Laconian Women Dancing, a very finished work but one in which assiduity has destroyed all charm Callimachus is reported to have also been a painter Cato in his expedition to Cyprus sold all the statues found there except one of Zeno, it was not the value of the bronze nor the artistic merit that attracted him, but its being the statue of a philosopher I mention this by the way, to introduce this distinguished instance also 54-56 B C

In mentioning statues—there is also one we must

^a The MSS give 'this empty example,' explained as implying that Cato neglected the example set by his great grandfather, Cato the Censor who disliked the Greeks

eunda, quamquam auctoris incerti, iuxta iostia,
 = Hercules tunicati, sola eo habitu Romae, tota facie
 sentiensque¹ suprema tunicae² in hac ties sunt
 tituli L Luculli imperatoris de manubus, alter
 pupillum Luculli filum ex S C dedicasse, tertius
 T Septimium Sabinum aed cui ex privato in
 publicum restituisse tot certaminum tantaeque
 dignationis simulacrum id fuit

- 94 XX Nunc praevertemur³ ad differentias aeris et
 mixtuas in Cyprio [coronarium et regulare est
 utrumque ductile]⁴ coronarium tenuit in lumnas,
 taurorumque felle tinctum speciem auri in coronis
 histionum praebet, idemque in uncias additis auri
 scripulis semis praetenui pyropi biatlea ignescit
 regulare et in aliis fit metallis, itemque caldarium
 differentia quod caldarium funditur tantum, malleis
 fragile, quibus regulae obsequitur ab aliis ductile
 appellatum, quale omne Cyprium est sed et in
 ceteris metallis cura distat a caldario, omne enim
 diligentius purgatis igni vitis excoctisque regulare
 95 est In reliquis generibus palma Campano perhi-

¹ sentiensque *B* sentientique *rell* sentienteque *edd vet*

² tunicae *B* tunica *rell* in tunica *edd vet*

³ *Vl* revertemur

⁴ coronarium ductile *cd* *Ind* om *rell*

^a *I* e the poisoned garment that caused his death

^b In campaigns against Mithridates, 74-67 B C

not pass over in spite of the sculptor's not being known—the figure, next to the Beaked Platform of Heracles in the Tunic,^a the only one in Rome that shows him in that dress, the countenance is stern and the statue expresses the feeling of the final agony of the tunic. On this statue there are three inscriptions, one stating that it had been part of the booty taken^b by the general Lucius Lucullus, and another saying that it was dedicated, in pursuance of a decree of the Senate, by Lucullus's son while still a ward, and the third, that Titus Septimius Sabinus as curule ædile had caused it to be restored to the public from private ownership. So many were the rivalries connected with this statue and so highly was it valued.

XX But we will now turn our attention particularly to the various forms of copper, and its blends. In the case of the copper of Cyprus 'chaplet copper', is made into thin leaves, and when dyed with ox-gall gives the appearance of gilding on theatrical property coronets, and the same material mixed with gold in the proportion of six scruples of gold to the ounce makes a very thin plate called pyropus, 'fire-coloured' and acquires the colour of fire. Bar copper also is produced in other mines, and likewise fused copper. The difference between them is that the latter can only be fused, as it breaks under the hammer, whereas bar copper, otherwise called ductile copper, is malleable, which is the case with all Cyprian copper. But also in the other mines, this difference of bar copper from fused copper is produced by treatment, for all copper after impurities have been rather carefully removed by fire and melted out of it becomes bar copper. Among the remaining kinds

*Various
forms and
blends of
copper and
bronze*

PLINY NATURAL HISTORY

- betui,¹ utensilibus vas² probatissimo plumbis
 fit hoc modis namque Capuae liquatur non carbonis
 ignibus sed ligni, puigaturque roboreo cribro³
 profusum in⁴ aquam frigidam ac saepius simili modo
 coquitur, novissime additis plumbi argentarii Hispani-
 mensis denis libris in centenas aeris ita lentescit
 colorumque iucundum trahit, qualem in aliis generibus
 96 aeris adfectant oleo ac sale fit Campanio¹ simile in
 multis partibus Italiae provincisque, sed octonas
 plumbi libras addunt et carbone recocunt propter
 inopiam ligni quantum ea res differentiae adferat,
 in Gallia maxime sentitur, ubi inter lapides cande-
 fictos funditur, exuente enim coctura nigrum
 atque fragile conficitur praeterea semel recoquunt
 quod saepius fecisse bonitati plumbum confert
 id quoque notasse non ab re est, aes omne frigore
 magno melius fundi
 97 Sequens temperatura statuaria est eademque
 tabularis hoc modo massa profatur in pumis, mox
 in profatum additur tertia portio aeris collectanei,
 hoc est ex usu coempti peculiare in eo condimen-
 tum attritu domiti et consuetudine nitoris veluti
 mansuefacti miscentur et plumbi argentarii pondo
 98 duodena ac selibrae centenis profati Appellatur

¹ perhibetur campano (§ 96 *int*) *B om vell*

² vasorum *con Warmington coll XIII 72*

³ ligno *K C Bailey*

⁴ in *add K C Bailey* perfusum aqua frigida *Sillig*

^a Tin and lead mixed in equal parts

^b Possibly mineral coal

of copper the palm goes to bronze of Campania which is most esteemed for utensils. There are several ways of preparing it. At Capua it is smelted in a fire of wood, not of charcoal, and then poured into cold water and cleaned in a sieve made of oak, and this process of smelting is repeated several times, at the last stage Spanish silver lead ^a being added to it in the proportion of ten pounds to one hundred pounds of copper. This treatment renders it pliable and gives it an agreeable colour of a kind imparted to other sorts of copper and bronze by means of oil and salt. Bronze resembling the Campanian is produced in many parts of Italy and the provinces, but there they add only eight pounds of lead, and do additional smelting with charcoal ^b because of their shortage of wood. The difference produced by this is noticed specially in Gaul, where the metal is smelted between stones heated red hot, as this roasting scorches it and renders it black and friable. Moreover they only smelt it again once whereas to repeat this several times contributes a great deal to the quality. It is also not out of place to notice that all copper and bronze fuses better in very cold weather.

The proper blend for making statues is as follows, *Blends for statues and moulds* and the same for tablets. At the outset the ore is melted, and then there is added to the melted metal a third part of scrap copper, that is copper or bronze that has been bought up after use. This contains a peculiar seasoned quality of brilliance that has been subdued by friction and so to speak tamed by habitual use. Silver-lead is also mixed with it in the proportion of twelve and a half pounds to every hundred pounds of the fused metal. There is also

etiamnum et formalis temperatura aeris teneirimi, quoniam nigri plumbi decima portio additui et argentarii vicesima, maximeque ita colorem bibit, quem Graecanicum vocant Novissima est quae vocatui olliva vase nomen hoc dante, ternis aut quaternis libris plumbi argentarii in centenas acris additis Cyprio si addatui plumbum, colos purpureae fit in statuum praetextis

99 XXI Aera extensa iobiginem celarius trahunt quam neglecta, nisi oleo perunguntur servari ea optime in liquida pice tradunt usus aeris ad perpetuitatem monumentorum iam pridem tialatus est tabulis aereis, in quibus publicae constitutiones inciduntur

100 XXII Metalla aeris multis modis instruunt medicinam, utpote cum ulcera omnia ibi ocissime sanentui, maxime tamen prodest¹ cadmea fit sine dubio haec et in argenti fornacibus, candidior ac minus ponderosa, sed nequaquam comparanda aeriariae plura autem genera sunt namque ut ipse lapis, ex quo fit aes, cadmea vocatui, fusuius necessarius medicinae inutilis, sic iuisus in fornacibus existit
101 alia, quae² originis suae nomen³ recipit fit autem

¹ prodest *cl* Par 6801, *cd* Flor Ricc ² prosunt *rell*

² alia quae aut aliamque *cid* aliaque aliam *J Muller*

³ originis suae nomen *Mayhoff* nominis sui originem *cid*
item Isid XVI 20 12

^a A blend for making moulds

^b The colour is in fact green One expects the word *aeruginem* here

^c See the next two notes

^d Cf § 2 of this book (p 126), mineral calamine and smithsonite = silicate and carbonate of zinc

^e Furnace calamine = oxide of zinc Cf K C Bailey, *The Elder Pliny's Chapters on Chemical Subjects*, II, pp 166-7

in addition what is called the mould-blend^a of bronze of a very delicate consistency, because a tenth part of black lead is added and a twentieth of silver-lead, and this is the best way to give it the colour called Græcamic 'after the Greek' The last kind is that called pot-bronze, taking its name from the vessels made of it, it is a blend of three or four pounds of silver-lead with every hundred pounds of copper The addition of lead to Cyprus copper produces the purple colour seen in the bordered robes of statues

XXI Things made of copper or bronze get *Copper rust* covered with copper-rust^b more quickly when they are kept rubbed clean than when they are neglected, unless they are well greased with oil It is said that the best way of preserving them is to give them a coating of liquid vegetable pitch The employment of bronze was a long time ago applied to securing the perpetuity of monuments, by means of bronze tablets on which records of official enactments are made

XXII Copper ores and mines supply medicaments in a variety of ways inasmuch as in their neighbourhood all kinds of ulcers are healed with the greatest rapidity, yet the most beneficial is *cadmea*^c This *Cadmea* is certainly also produced in furnaces where silver is smelted, this kind being whiter and not so heavy, but it is by no means to be compared with that from copper There are however several varieties, for while the mineral itself^d from which the metal is made is called *cadmea*, which is necessary for the fusing process but is of no use for medicine, so again another kind^e is found in furnaces, which is given a name indicating its origin It is produced by the thinnest

egesta flammis atque flatu tenuissima parte materiae
 et camais lateribusque foinacium pro quantitate
 levitatis adplicata tenuissima est in ipso fornacium
 ore quam flammae eructarunt,¹ appellata capnitis,
 exusta et nimia levitate similis favillae interior
 optima, camais dependens et ab eo argumento
 botivitis nominata, ponderosior haec priore, levior
 102 secuturis—duo eius colores, deterior cinereus, pumicis
 melior —, fixabilis oculorumque medicamentis utilis-
 sima tertia est in lateribus foinacium, quae propter
 gravitatem ad camaras pervenire non potuit haec
 dicitur placitis, et ipsa ab argumento plantitiei²
 ciusta venius quam pumex, intus varia, ad psorias
 103 utilior et cicatrices trahendas fiunt³ ex ea duo
 alia genera, onychitis extra paene caeruleae, intus
 onychis maculis similis, ostracitis tota nigra et e
 ceteris sordidissima, vulneribus maxime utilis
 omnis autem cadmea, in Cypri⁴ fornacibus optima,
 iterum a medicis coquitur carbone puro atque,
 ubi in cinerem redit, extinguitur vino Ammineo quae
 ad emplastia praeparatur, quae vero ad psorias, aceto
 104 quidam in ollis fictilibus tusam urunt et lavant in

¹ *Vll* quae aut que aut qua flamma eructatur aut eructantur
 aut fluctuantur eructarunt *Mayhoff*

plantitiei *Salmasius* plantie

³ fiunt *B* fluunt *rell*

⁴ Cyprus *coni Mayhoff* cyprio aut cypria aut cypri

part of the substance being separated out by the flames and the blast and becoming attached in proportion to its degree of lightness to the roof-chambers and side-walls of the furnaces, the thinnest being at the very mouth of the furnace, which the flames have belched out, it is called 'smoky *cadmea*' from its burnt appearance and because it resembles hot white ash in its extreme lightness. The part inside is best, hanging from the vaults of the roof-chamber, and this consequently is designated 'grape-cluster *cadmea*' this is heavier than the preceding kind but lighter than those that follow—it is of two colours, the inferior kind being the colour of ash and the better the colour of pumice—and it is friable, and extremely useful for making medicaments for the eyes. A third sort is deposited on the sides of furnaces, not having been able to reach the vaults because of its weight, this is called in Greek 'placitis,' 'caked residue,' in this case by reason of its flatness, as it is more of a crust than pumice, and is mottled inside, it is more useful for itch-scabs and for making wounds draw together into a scar. Of this kind are formed two other varieties, onychitis which is almost blue outside but inside like the spots of an onyx or layered quartz, and ostracitis 'shell-like residue' which is all black and the dirtiest of any of the kinds, this is extremely useful for wounds. All kinds of *cadmea* (the best coming from the furnaces of Cyprus) for use in medicine are heated again on a fire of pure charcoal and, when it has been reduced to ash, if being prepared for plasters it is quenched with Ammonean wine, but if intended for itch-scabs with vinegar. Some people pound it and then burn it in earthenware pots, wash it in

PLINY NATURAL HISTORY

mortarius postea siccant Nymphodorus lapidem
 ipsum quam gravissimum spississimumque urit prius
 et exustum Chio vino restinguit tunditque, mox
 luteo cribat atque in mortario terit, mox aqua
 pluvia maceiat iterumque terit quod subsedit, donec
 cerussae simile fiat, nulla dentium offensa eadem
 Iollae ratio, sed quam purissimum eligit lapidem
 105 XXXIII cadmeae effectus siccae, peisanae, sistere
 fluctiones, pterygia et sordes oculorum purgare,
 scabritiam extenuare et quidquid in plumbi effectum
 dicemus

Et aes ipsum uritur ad omnia eadem, praeterque
 albugines oculorum et cicatrices, ulcera quoque
 oculorum cum lacte sanat, itaque Aegyptii colliri
 106 id modo terunt in coticulis facit et vomitiones e
 melle sumptum uritur autem Cyprium in fictilibus
 crudis cum sulphuris pari pondere, vasorum¹ circum-
 lito spiramento, in caminis, donec vasa ipsa perco-
 quantur quidam et salem addunt, aliqui alumen
 pro sulphure, alii nihil, sed aceto tantum aspergunt
 ustum teritur in² mortario Thebaico, aqua pluvia
 lavatur iterumque adiecta largiore teritur et, dum
 considat, relinquitur, hoc saepius, donec ad speciem

¹ vasorum *Mayhoff* vaso aut vase

² in *ard* *Mayhoff*

^a A medical man of the third century B C

moistus and afterwards dry it Nymphodorus's^a process is to burn on hot coals the most heavy dense piece of *cadmea* that can be obtained, and when it is thoroughly burnt to quench it with Chian wine, and pound it, and then to sift it through a linen cloth and grind it in a mortar, and then macerate it in rain-water and again grind the sediment that sinks to the bottom till it becomes like white lead and offers no grittiness to the teeth Iollas'^b method is the same, but he selects the purest specimens of native *cadmea* XXIII The effect of *cadmea* is to dry moisture, to heal lesions, to stop discharges, to cleanse inflamed swellings and foul sores in the eyes, to remove eruptions, and to do everything that we shall specify in dealing with the effect of lead

Copper itself is roasted to use for all the same purposes and for white-spots and scars in the eyes besides, and mixed with milk it also heals ulcers in the eyes, and consequently people in Egypt make a kind of eye-salve by grinding it in small mortars Taken with honey it also acts as an emetic but for this Cyprian copper with an equal weight of sulphur is roasted in pots of unbaked earthenware, the mouth of the vessels being smeared round with oil, and then left in the furnace till the vessels themselves are completely baked Certain persons also add salt, and some use alum instead of sulphur, while others add nothing at all, but only sprinkle the copper with vinegar When burnt it is pounded in a mortar of Theban stone, washed with rainwater, and then again pounded with the addition of a larger quantity of water, and left till it settles, and this process is repeated several times, till it is reduced

^b A Bithynian medical writer of unknown date

mini redeat tunc siccatum in sole in aerea pyride
servatur

- 107 XXIV Et scoria aeris simili modo lavatur, minore¹
effectu quam ipsum aes sed et aeris flos medicinae
utilis est fit aere fuso et in alias fornaces tralato,
ibi flatu crebriore excutiuntur veluti mili squamae,
quas vocant florem, cadunt autem, cum panes aeris
aqua refrigerantur, rubentque similiter squamae
veris, quam vocant lepida et sic adulteratur flos, ut
squama veneat pro eo est autem squama aeris
decussa vi clavis, in quos panes aerei feruntur,
in Cypri maxime officinis omnis² differentia haec
est, quod squama excutitur ictu isdem panibus, flos
108 cadit sponte squamae est alterum genus subtilius,
ex summa scilicet lanugine decussum, quod vocant
stomoma

XXV Atque haec omnia medici—quod pace
eorum divisisse liceat—ignorant parent³ nominibus
in tantum⁴ a conficiendis medicaminibus absunt,
quod esse proprium medicinae solebat nunc quo-
tiens incidere in libellos, componere ex iis volentes
aliqua, hoc est impendio miserorum experiri⁵ com-
mentaria,⁶ credunt Seplasiae omnia fraudibus cor-

¹ minor *cdd* fere omnes

² omnis *Mayhoff* (*qui et summa con*) omnia

³ parent *Urlichs* paret *B* pars maior et *rell* p m paret
Detlefsen ³⁻⁴ parent nominibus hi tantum *con* *Mayhoff*

⁵ *l* expediri

⁶ commentariaque *B* supra post libellos trans *Urlichs*

^a The dross produced when the ore is fused

^b Probably in the main red cuprous oxide (not black cupric oxide) with some metallic copper in it

^c Seplasia was the special quarter of Capua where perfumes were sold

to the appearance of cinnabar, then it is dried in the sun and put to keep in a copper box

XXIV The slag ^a of copper is also washed in the same way, but it is less efficacious than copper itself *slag scales and flower of copper*
The flower ^b of copper also is useful as a medicine. It is made by fusing copper and then transferring it to other furnaces, where a faster use of the bellows makes the metal give off layers like scales of millet, which are called the flower. Also when the sheets of copper are cooled off in water they shed off other scales of copper of a similar red hue—this scale is called by the Greek word meaning ‘husk’—and by this process the flower is adulterated, so that the scale is sold as a substitute for it—the genuine flower is a scale of copper forcibly knocked off with bolts into which are welded cakes of the metal, specially in the factories of Cyprus. The whole difference is that the scale is detached from the cakes by successive hammerings, whereas the flower falls off of its own accord. There is another finer kind of scale, the one knocked off from the down-like surface of the metal, the name for which is ‘stomoma’.

XXV But of all these facts the doctors, if they will permit me to say so, are ignorant—they are governed by names—so detached they are from the process of making up drugs, which used to be the special business of the medical profession. Nowadays whenever they come on books of prescriptions, wanting to make up some medicines out of them, which means to make trial of the ingredients in the prescriptions at the expense of their unhappy patients, they rely on the fashionable druggists’ shops ^c which spoil everything with fraudulent adulterations, and for a long time they have been

rumptenti iam pridem¹ facta emplastia et colligia
mercantur, tabesque mercium aut fiasus Seplasiae sic
exhibetur¹²

109 Et squama autem et flos uiuntur in patinis fictilibus aut aereis dein lavantur ut supra ad eosdem usus squama³ et amplius narium carnosae vitia, item sedis et gravitates aurium per fistulam in eas flatu impulsae et uvas oris farina admota tollit et tonsillas cum melle fit ex candido aere squama longe Cypria inefficacior nec non uirga pueri prius macerant clavos panesque quidam excussuram squamam, teruntque et aqua pluvia lavant dant et hydropicis eam drachmis ii in mulsi hemina et inlinunt cum polline

110 XXVI Aeruginis quoque magnus usus est pluribus fit modis namque et lapidi, ex quo coquitur aes, deaeditur, et aere candido perforato atque in cadis suspenso super acetum acie optinatumque operculo multo probatior est, si hoc idem squamis fiat quidam visa ipsa candidi aeris fictilibus condunt in acetum raduntque decimo die alii vinaceis contegunt totidemque post dies radunt alii delimatam aeris scobem aceto spargunt versantque spathis saepius die, donec absumatur eandem scobem

¹ pridem *edd veti* quidem

² sic exhibetur *Warmington* sic excitetur *Mayhoff* (qui et excitatur *coni*) exsiccatur *coni Sillig* sicce taxetur *Ian alii alia* sic cevatetur *B¹* sicce sane duret *B²* sic exteritur *rell recte²*

³ squama *Mayhoff* que *ed Leid Voss, ed Flor Ricc om rell*

^a Or, if we read *exteritur* (is ground out), 'finds its way into the mortar' (thus K C Bailey)

^b Brass ^c Basic copper carbonate

^d Basic copper acetate or true verdigris, which does not occur in a natural state

buying plasters and eye-salves ready made, and thus is deteriorated rubbish of commodities and the fraud of the druggists' trade put on show ^a

Both scale however and flower of copper are burnt in earthenware or copper pans and then washed, as described above, to be applied to the same purposes, § 106 the scale also in addition removes fleshy troubles in the nostrils and also in the anus and dullness of hearing if forcibly blown into the ears through a tube, and, when applied in the form of powder, removes swellings of the uvula, and, mixed with honey, swellings of the tonsils. There is a scale from white copper ^b that is far less efficacious than the scale from Cyprus, and moreover some people steep the bolts and cakes of copper beforehand in a boy's urine when they are going to detach the scale, and pound them and wash them with rainwater. It is also given to diopsical patients in doses of two drams in half a sextarius of honey-wine, and mixed with fine flour it is applied as a liniment.

XXVI Great use is also made of verdigris *Verdigris*. There are several ways of making it, it ^c is scraped off the stone from which copper is smelted, or by ^d drilling holes in white copper ^b and hanging it up in casks over strong vinegar which is stopped with a lid, the verdigris is of much better quality if the same process is performed with scales of copper. Some people put the actual vessels, made of white copper, into vinegar in earthenware jars, and nine days later scrape them. Others cover the vessels with grape-skins and scrape them after the same interval, others sprinkle copper filings with vinegar and several times a day turn them over with spatules till the copper is completely dissolved. Others

- alii terere in mortariis aereis ex aceto malunt
 - ocissime vero contingit coronamentorum recisamentis in
 112 acetum id¹ additis adulterant marmore trito
 maxime Rhodiam aeruginem, alii pumice aut
 cummi praecipue autem fallit atramento sutorio
 adulterata, cetera enim dente deprehenduntur
 stidentia in fiendo experimentum in vitillo
 ferreo, nam quae sincera est, suum colorem retinet,
 quae mixta atramento, rubescit deprehenditur et
 papyro galla prius macerato, nigrescit enim statim
 aerugine inlita deprehenditur et visu maligne
 113 viens sed sive sinceram sive adulteram² aptissi-
 mum est elui siccataque in patina nova uini ac
 versari, donec favilla fiat, postea teritur ac re-
 conditur aliqui in cindis fictilibus urunt, donec
 figlinum percoquatur nonnulli et tus masculum
 admiscent lavatur autem aerugo sicut cadmea
 vis eius collyriis oculorum aptissima et delacrima-
 tionibus mordendo proficiens, sed ablui necessarium
 penicillis calidis, donec iodere desinat
 114 XXVII Hieracium vocatur collyrium, quod ea³
 maxime constat temperatur autem id ham-

¹ *seclud* id K C Barley

² I l adulteratam

³ ea Mayhoff illa quidam apud Dalecamp ita

^a Used for colouring leather The term probably includes both green vitriol or ferrous sulphate, which is our copperas, and blue vitriol, or cupric sulphate

^b This is not true

^c Or sponges

^d As K C Bailey rightly says, not *sal Hammoniacus* (a

prefer to grind copper filings mixed with vinegar in copper mortars. But the quickest result is obtained by adding to the vinegar shavings of coronet copper. Rhodian verdigris is adulterated chiefly with pounded marble, though others use pumicestone or gum. But the adulteration of verdigris that is the most difficult to detect is done with shoemakers' black,^a the other adulterations being detected by the teeth as they crackle when chewed. Verdigris can be tested on a hot fire-shovel, as a specimen that is pure keeps ^b its colour, but what is mixed with shoemakers' black turns red. It is also detected by means of papyrus previously steeped in an infusion of plantgall, as this when smeared with genuine verdigris at once turns black. It can also be detected by the eye, as it has an evil green colour. But whether pure or adulterated, the best way is to wash it and when it is dry to burn it on a new pan and keep turning it over till it becomes glowing ashes, and afterwards it is crushed and put away in store. Some people burn it in raw earthenware vessels till the earthenware is baked through, some mix in also some male frankincense. Verdigris is washed in the same way as *cadmea* § 106. Its powerfulness is very well suited for eye-salves and its mordant action makes it able to produce watering at the eyes, but it is essential to wash it off with swabs ^c and hot water till its bite ceases to be felt.

XXVII Hierax's Salve is the name given to an eye-salve chiefly composed of verdigris. It is made by mixing together four ounces of gum of Hammon,^d

variety of common salt, which itself is not sal ammoniac = ammonium chloride)

PLINY NATURAL HISTORY

- moniaci uncus IIII, aeruginis Cypriae II, atramenti
 sutorii, quod chalcanthum vocant, totidem, misyos
 una, croci VI haec omnia trita aceto Thasio
 colliguntur¹ in pilulas, excellentis remedii contra
 initia glaucomatum et suffusionum, contra caligines
 aut scabritias et albugines et genarum vitia cruda
 115 autem aerugo vulnerum emplastris miscetur ois
 etiam gingivarumque exulcerationes mirifice emen-
 dat et labiorum ulcera cum oleo quod si et cera
 addatur, purgat et ad cicatricem perducit aerugo
 et cillum fistularum erodit vitiorumque circa sedem
 sive per se sive cum hammoniaco inlita vel collyrii
 modo in fistulas adacta eadem cum resinae tere-
 binthinae tertia parte subacta lepras tollit
- 16 XXVIII Est et alterum genus aeruginis, quam vo-
 cant scoleca, in Cyprio <mortario Cyprio>² aere trito³
 alumine et sale aut nitro pari pondere cum aceto albo
 quam acerrimo non fit hoc nisi aestuosissimis⁴
 diebus circa canis ortum tentur autem, donec unde
 fiat contrahatque se vermiculorum specie, unde
 et nomen quod vitiatum⁵ ut emendetur, II partes
 quam fuere aceti miscentur urinae pueri inpubis
 idem autem in medicamentis et santerna efficit,
 qua diximus aurum feruminari usus utriusque qui

¹ collinuntur B

- <mortario Cyprio> con Mayhoff

³ trito B intrito cd Flor Ricc hic trito rell hoc t
 edd vet

⁴ aestivosissimis B

⁵ vitiatum Mayhoff vitium

^a Copper pyrites

^b See pp 210-1, note ^d

^c This sentence is probably defective

two of Cyprian verdigris, two of the copperas called flower of copper, one of *misy*^a and six of saffron, all these ingredients are pounded in Thasian vinegar and made up into pills, that are an outstanding specific against incipient glaucoma and cataract, and also against films on the eyes or roughnesses and white ulcerations in the eye and affections of the eyelids. Verdigris in a crude state is used as an ingredient in plasters for wounds also. In combination with oil it is a marvellous cure for ulcerations of the mouth and gums and for sore lips, and if wax is also added to the mixture it cleanses them and makes them form a cicatrix. Verdigris also eats away the callosity of fistulas and of sores round the anus, either applied by itself or with gum of Hammon,^b or inserted into the fistula in the manner of a salve. Verdigris kneaded up with a third part of turpentine also removes leprosy.

XXVIII There is also another kind of verdigris called from the Greek worm-like verdigris, made by grinding up in a mortar of true cyprian copper with a pestle of the same metal equal weights of alum and salt or soda with the very strongest white vinegar. This preparation is only made on the very hottest days of the year, about the rising of the Dogstar. The mixture is ground up until it becomes of a green colour and shivers into what looks like a cluster of small worms, whence its name. To remedy any that is blemished, the urine of a young boy to twice the quantity of vinegar that was used is added to the mixture.^c Used as a drug, worm-verdigris has the same effect as santerna which we spoke of as used for ^{XXXIII} soldering gold, both of them have the same ⁹³ properties as verdigris. Native worm-verdigris is

PLINY NATURAL HISTORY

- aeruginis scolex fit et per se deasus aeraio lapidi,
de quo nunc dicemus

117 XXIX Chalcitum vocant, ex quo et ipso aes
coquitur distat a cadmea, quod illa super terram
ex subdialibus petris caeditur, haec ex oblutis, item
quod chalcitis fiat se statim, mollis natura, ut
videatur lanugo concreta est et alia distinctio
quod chalcitis tria genera continet, aëris et misyos
et soreos, de quibus singulis dicemus suis locis

118 habet autem aeris venas oblongas probatur mellei
coloris, gracili venarum discursu, friabilis nec
lapidosa putant et recentem utiliore esse, quo-
nam inveterata soli fiat vis¹ eius ad excrescentia
in ulceribus, sanguinem sistere, gingivas, uvam,
tonsillas farina compescere, volvae vitis in velleie
imponi cum suco vero pomii verendorum additur

119 emplastris maceratur autem in fictili ex aceto
circumlito fimo diebus XL, et colorem croci trahit
tum admixto cadmeae pari pondere medicamentum
efficit psoricon dictum quod si ii partes chalcitidis
tertia cadmeae temperentur, acrius hoc idem fiat,
etiamnum vehementius, si aceto quam vino² tem-
peretur, tosta vero efficacior fit ad eadem omnia

120 XXX Soli Aegyptium maxime laudatur, multum

¹ usus conr *Mayhoff*

² <si> vino conr *Mayhoff*

^a Copper pyrites in process of decomposition For *cadmea*
see §§ 2 and 100 and notes

^b Copper pyrites

^c Probably decomposing marcasite, or sometimes black
porous limestone with decomposing pyrites in it (K C Bailev)

also obtained by scraping a copper ore of which we shall now speak.

XXIX Chalcitis, 'copper-stone,' is the name of ^(chalcitis) an ore,^a that from which copper also, besides *cadmea*, is obtained by smelting. It differs from *cadmea* because the latter is quarried above ground, from rocks exposed to the air, whereas chalcitis is obtained from underground beds, and also because chalcitis becomes immediately friable, being of a soft nature, so as to have the appearance of congealed down. There is also another difference in that chalcitis contains three kinds of mineral, copper, *misy*^b and *sori*,^c each of which we shall describe in its place, §§ 12, 13, and the veins of copper in it are of an oblong shape. The approved variety of chalcitis is honey coloured, and streaked with fine veins, and is friable and not stony. It is also thought to be more useful when fresh, as when old it turns into *sori*. It is used for growths in ulcers, for arresting hæmorrhage and, in the form of a powder, for acting as an astringent on the gums, uvula and tonsils and, applied in wool, as a pessary for affections of the uterus, while with leek juice it is employed in plasters for the genitals. It is steeped for forty days in vinegar in an earthenware jar, covered with dung, and then assumes the colour of saffron, then an equal weight of *cadmea* is mixed with it and this produces the drug called psoricon or cure for itch. If two parts of chalcitis are mixed with one of *cadmea* this makes a stronger form of the same drug, and moreover it is more violent if it is mixed in vinegar than if in wine, and when roasted it becomes more effective for all the same purposes.

XXX Egyptian *sori* is most highly commended, *Sori*

PLINY NATURAL HISTORY

superato Cyprio Hispaniensique et Afico, quamquam oculorum curationi quidam utilius putent Cyprium, sed in quacumque natione optimum cui maximum virus olfactu, tritumque pinguiter nigrescens et spongiosum stomacho res contraria in tantum, ut quibusdam olfactum modo vomitiones moveat et Aegyptium quidem tale,¹ alterius nationis contritum splendet ut misy et est lapidosius prodest autem et dentium dolori, si continuatur atque colluat, et ulceribus omnis gravibus quaeque seipant uritui carbonibus ut chalcitis

- 121 XXXI Misy aliqui tradiderunt fieri exusto lapide in scrobibus, flore eius luteo miscente se ligni pineae favillae re vera autem e supra dicto fit lapide, concretum natura discretumque vi, optimum in Cypriorum officinis, cuius notae sunt friati aureae scintillae et, cum teratur, haenosa natura sine tera,² chalcitidi³ dissimilis⁴ hoc admiscent qui aium purgant utilitas eius infusi cum rosaceo auribus purulentis et in lana inpositi capitis ulceribus extenuat et scabietas oculorum inveteratas, praecipue
122 utile tonsillis contraque anginas et suppurata ratio

¹ tale est *cd deperd Dalecamp*

² terrae *cd Lind* terrea *ed Lugd*

³ chalcitidis *cd Flor Ricc*

⁴ dissimilis *K C Bailey* similis *cd Flor Ricc* sin *B¹*
sive *cd Par* 6801 similis *rell*

^a Probably produced in most cases by sulphuretted hydrogen

^b Of hollow teeth as is clear from the context and from Diosc I, 141, V, 119

^c *Chalcitis*, § 117

being far superior to that of Cyprus and Spain and Africa, although some people think that Cyprus *sori* is more useful for treatment of the eyes, but whatever its provenance the best is that which has the most pungent odour,^a and which when ground up takes a greasy, black colour and becomes spongy. It is a substance that goes against the stomach so violently that with some people the mere smell of it causes vomiting. This is a description of the *sori* of Egypt. That from other sources when ground up turns a bright colour like *msy*, and it is harder, however, if it is held in the cavities^b and used plentifully as a mouth-wash it is good for toothache and for serious and creeping ulcers of the mouth. It is burnt on charcoal, like chalcitis.

XXXI Some people have reported that *msy* *Misy* is made by burning mineral in trenches, its fine yellow powder mixing itself with the ash of the pine wood burnt, but as a matter of fact though got from the mineral^c above mentioned, it is part of its substance and separated from it by force, the best kind being obtained in the copper-factories of Cyprus, its marks being that when broken it sparkles like gold and when it is ground it has a sandy appearance, without earth, unlike chalcitis. A mixture of *msy* is employed in the magical purification of gold.^d Mixed with oil of roses it makes a useful infusion for suppurating ears and applied on wool a serviceable plaster for ulcers of the head. It also reduces chronic roughness of the eyelids, and is especially useful for the tonsils and against quinsy and suppura-

^d The process of counteracting the supposed evil influence of gold when held over the head of children, etc. See XX\XIII, 84

PLINY NATURAL HISTORY

ut XVI diachmae in hemina aceti coquantur addito melle, donec lentescat sic ad supra dicta utile est quotiens opus sit mollium vim eius, mel adspersum ei odit et callum fistularum ex aceto fomentum et collyrium additum, sistit et sanguinem ulceraeque quae serpant quaeve putrescant, absumit et excrescentes carnes peculiariter virilitatis virtus utile et feminarum profluvium sistit

- 123 XXXII Graeci cognationem aeris nomine fecerunt et atramento sutorio, appellant enim chalcanthon nec ullius aequae mira natura est fit in Hispaniae puteis stagnisve id genus aquae habentibus decoquitur et admixta dulci pari mensura et in piscinas ligneas funditur immobilibus¹ super his transtris dependent iestes lapillis extentae, quibus adhaerescens limus vitibus acinis imaginem quandam uvae reddit exemptum ita siccatur diebus XXI color est caeruleus perquam spectabili nitore vitiumque
124 esse creditur diluendo fit atramentum tinguendis cuius fit et pluribus modis genere terrae eo in scrobis cavato, quorum ex lateribus destillantes hiberno gelu stirias stalagmian vocant, neque est purius aliud sed ex eo, candidum colorem sentiente
125 viola, lonchoton² appellant fit et in saxorum

¹ immobilibus *edd vet* immobilis

² *Vl* locoton leucoion *Hermolaus Barbarus* leucanthon *edd vet*

^a See n^a on § 112

^b *I e* water holding in solution the substance referred to

^c So Diosc V, 114 But the description suggests 'leucoion,' 'violet white' The ancient like the modern violas were of various colours

tions The method is to boil 16 diams of it in a twelfth of a pint of vinegar with honey added till it becomes of a viscous consistency this makes a useful preparation for the purposes above mentioned When it is necessary to make it softer, honey is sprinkled on it It also removes the callosity of fistulous ulcers when the patients use it with vinegar as a fomentation, and it is used as an ingredient in eye-salves, arrests hæmorrhage and creeping or putrid ulcers, and reduces fleshy excrescences It is particularly useful for troubles in the sexual organs in the male, and it checks menstruation

XXXII The Greeks by then name for shoe-makers'-black^a have made out an affinity between it and copper they call it *chalcanthos*, 'flower of copper', and there is no substance that has an equally remarkable nature It occurs in Spain in wells or pools that contain that sort of water^b This water is boiled with an equal quantity of pure water and poured into wooden tanks Over these are firmly fixed cross-beams from which hang cords held taut by stones, and the mud clinging to the cords in a cluster of glassy drops has somewhat the appearance of a bunch of grapes It is taken off and then left for thirty days to dry Its colour is an extremely brilliant blue, and it is often taken for glass, when dissolved it makes a black dye used for colouring leather It is also made in several other ways earth of the kind indicated is hollowed into trenches, droppings from the sides of which form icicles in a winter frost which are called drop-flower of copper, and this is the purest kind But some of it, violet with a touch of white, is called *lonchoton*, 'lance-headed'^c It is also made in pans hollowed

Shoenal crs
black

PLINY NATURAL HISTORY

- citinis pluvia aqua comixto limo gelante, fit et
 salis modo flagrantissimo sole admissas dulces aquas
 cogente ideo quidam duplici differentia fossile
 aut facticium appellant hoc pallidus et quantum
 126 colore, tantum bonitate deterius probant maxime
 Cyprium in medicinae usu sumituri ad pellenda
 ventus animalia drachmae pondere cum melle
 purgat et caput dilutum ac naribus instillatum, item
 stomachum cum melle aut aqua mulsa sumptum
 medetur et oculorum scabittiae dolorique et caligini
 et omnis ulceribus sistit et sanguinem narium, item
 haemorrhoidum extrahit ossa fracta cum semine
 hyoscyami, suspendit epiphoras penicillo fronti
 impositum efficax et in emplastris ad puiganda
 127 volneia¹ et excrecentia ulcerum tollit et uvas,
 vel si decocto tangantur cum lini quoque semine
 superponitur emplastris ad dolores tollendos quod
 ex eo candicat in uno usu praefertur violaceis, ut
 gravitati aurium per fistulas inspiretur volneia
 per se inlitum sanat, sed tingit² cicatrices nuper
 inventum visorum in haena et leonum ora spargere
 illo, tantaque est vis in adstringendo, ut non queant
 mordere
- 128 XXXIII Etiamnum in aeranis reperiuntur quae

¹ I I ulcera

² I I tingit stringit *Caesarius*

^a Zinc oxide

^b Zinc oxide made impure by charcoal dust and from other causes (K C Bailey)

in the rocks, into which the slime is carried by rain-water and freezes, and it also forms in the same way as salt when very hot sunshine evaporates the fresh water let in with it. Consequently some people distinguish in twofold fashion between the mined flower of copper and the manufactured, the latter paler than the former and as much inferior in quality as in colour. That which comes from Cyprus is most highly approved for medical employment. It is taken to remove intestinal worms, the dose being one dram mixed with honey. Diluted and injected as drops into the nostrils it clears the head, and likewise taken with honey or honey-water it purges the stomach. It is given as a medicine for roughness of the eyes, pain and mistiness in the eyes, and ulceration of the mouth. It stops bleeding from the nostrils and also hæmorrhoidal bleeding. Mixed with henbane seed it draws out splinters of broken bones, applied to the forehead with a swab it arrests running of the eyes, also used in plasters it is efficacious for cleansing wounds and gatherings of ulcers. A mere touch of a decoction of it removes swellings of the uvula, and it is laid with linseed on plasters used for relieving pains. The whitish part of it is preferred to the violet kinds for one purpose, that of being blown through tubes into the ears to relieve ear-trouble. Applied by itself as a liniment it heals wounds, but it leaves a discoloration in the scars. There has lately been discovered a plan of sprinkling it on the mouths of bears and lions in the arena, and its astringent action is so powerful that they are unable to bite.

XXXIII The substances called by Greek names *Zinc oxide* meaning 'bubble' ^a and 'ash' ^b are also found in

- vocant pompholygem et spodon differentia quod pompholyx lotua separatur spodos inlota est aliqui quod sit candidum levissimumque pompholygem vivere et esse aeris ac cadmeae favillam, spodon nigriorem esse ponderosioraque, deasam parietibus foinacium, mixtis scintillis,¹ aliquando et carbonibus
- 129 haec aceto accepto odorem aeris praestat et, si tangatur lingua, saporem horridum 'convenit oculorum medicamentis, quibuscumque vitis occurrens, et ad omnia quae spodos hoc solum distat, quod huius elutionis vis est additur et in emplastris, quibus lenis refrigeratio quaeritur et siccatio utilior ad omnia quae vino lota est
- 130 XXXIV Spodos Cypria optima fit autem liquescentibus cadmea et aeriario lapide levissimum hoc est flatuariae totius evolatque e foinacibus et tectis adhaerescit, a fulgine distans candore quod minus candidum ex ea, inmatuariae fornacis argumentum est, hoc quidam pompholygem vocant quod vero rubicundius ex eis invenitur, acriorem vim habet et exulcerat adeo, ut, cum lavatur, si attigit oculos,
- 131 excaecet est et mellei coloris spodos, in qua plurimum aeris intellegitur sed quodcumque genus lavando fit utilius, puigatur ante panno,² dein

¹ lapillis (vel cinere, pilis) con *Mayhoff*

² linteo panno con *K C Bailey* purgantur ramenta panno *D Arcy Thompson* ante pinna aut ante penna

the furnaces of copper works The difference between them is that bubble is disengaged by washing but ash is not washed out Some people have given the name of 'bubble' to the substance that is white and very light in weight, and have said that it is the ashes of copper and *cadmea*, but that 'ash' is darker and heavier, being scraped off the walls of furnaces, mixed with sparks from the ore and sometimes also with charcoal This material when vinegar is applied to it gives off a smell of copper, and if touched with the tongue has a horrible taste It is a suitable ingredient for eye medicines, remedying all troubles whatever, and for all the purposes for which 'ash' is used, its only difference is that its action is less violent It is also used as an ingredient for plasters employed to produce a gentle cooling and drying effect It is more efficacious for all purposes when it is moistened with wine

XXXIV Cyprian ash is the best It is produced when *cadmea* and copper ore are melted The ash in question is the lightest part of the whole substance produced by blasting, and it flies out of the furnaces and adheres to the roof, being distinguished from soot by its white colour Such part of it as is less white is an indication of inadequate firing, it is this that some people call 'bubble' But the redder part selected from it has a keener force, and is so corrosive that if while it is being washed it touches the eyes it causes blindness There is also an ash of the colour of honey, which is understood to indicate that it contains a large amount of copper But any kind is made more serviceable by washing, it is first purified with a strainer of cloth and then given a more substantial washing, and the rough portions

- crassiore¹ lotura digitis scabritiae excernuntur²
 eximia³ vis est eius, quae vino lavatur est aliqua
 et in genere vini differentia leni enim lota collyrius
 oculorum minus utilis putatur eademque efficacior
 ulceribus, quae manent, vel oris, quae madeant, et
 omnibus medicamentis, quae parentur contra gan-
 132 graenas fit et in argenti fornacibus spodos, quum
 vocant Laurum utilissima autem oculis adfuma-
 tur quae fiat in aurum, nec in alia parte magis est
 vitae ingenium minui quippe ne quaerenda essent
 metalla, vilissimis rebus utilitates easdem excogitavit
 133 XXXV Antispodon vocant cinerem fici arboris
 vel caprifici vel myrti foliorum cum tenerum ramorum
 partibus vel oleasti vel oleae vel cotonei mali
 vel lentisci, item ex moris immaturis, id est candidis,
 in sole aefectis vel e buxi coma aut pseudocypri
 aut iubi aut terebinthi vel oenanthes taurini
 quoque glutinis aut linteorum cinerem similiter
 polleere inventum est utuntur omnia ea ciudo
 fictili in fornacibus, donec figlina percoquantur
 134 XXXVI In acrius officinis et smegma fit iam
 liquato aere ac percocto additis etiamnum carbonibus
 paulatimque accensis, ac repente vehementiore flatu

¹ crassiore aut crassior *edd* (crossiora *ed* Lind) crassiora
D'Arcy Thompson crebriore *con* *Mayhoff*

² scabritiae (scabritis scabritiae *B*) excernuntur *edd* sca-
 britiem exterunt *edd* *vett* excernit *Caesarius*

³ eximia *Mayhoff* et media *B* om et *vell*

^a So called from Laurum in Attica, where there are still
 silver mines

^b This word *σμήγμα* can, it seems, be used not only for a
 detergent or cleansing agent, but also for the stuff removed

are picked out by the fingers. When it is washed with wine it is particularly powerful. There is also some difference in the kind of wine used, as when it is washed with weak wine it is thought to be less serviceable for eye-salves, and at the same time more efficacious for running ulcers or for ulcers of the mouth that are always wet and more useful for all the antidotes for gangrene. An ash called *Lauriotis*^a is also produced in furnaces in which silver is smelted, but the kind said to be most serviceable for the eyes is that which is formed in smelting gold. Nor is there any other department in which the ingenuities of life are more to be admired, inasmuch as to avoid the need of searching for metals experience has devised the same utilities by means of the commonest things.

XXXV The substance called in Greek 'antispodos' 'substitute ash' is the ash of the leaves of the fig-tree or wild fig or myrtle together with the tenderest parts of the branches, or of the wild olive or cultivated olive or quince or mastic and also ash obtained from unripe, that is still pale, mulberries, dried in the sun, or from the foliage of the box or mock-gladiolus, or bramble or turpentine-tree or *œnanthe*. The same virtues have also been found in the ash of bull-glue or of linen fabrics. All of these are burnt in a pot of raw earth heated in a furnace until the earthenware is thoroughly baked.

XXXVI Also 'smegma'^b is made in copper forges by adding additional charcoal when the copper has already been melted, and thoroughly fused, and gradually kindling it, and suddenly when a stronger blast is applied a sort of chaff of

Smegma

by cleansing, so here it means floating impurities containing some copper (K. C. Bailey)

expuitur aeris palei quaedam solum, quo excipiat, striatum esse debet marilla ¹

- 135 XXXVII Ab ea discernitur quam in isdem officinis diphrygem vocant Graeci ab eo, quod bis torreatur cuius origo triplex fieri enim traditur ex lipide pyrite cremato in caminis, donec excoquat in rubicam fit et in Cypio ex luto cuiusdam specus aefacto ² prius, mox paulatim circumdatis sumentis ³ tertio fit modo in foinacibus aeris faecē subsidente differentia est, quod ⁴ aes ipsum in catinos defluit, scoria extra foinaces, flos supernat, diphryges
136 remanent quidam tradunt in foinacibus globos lapidis, qui coquatur, feruminari, circa hunc aes fervere, ipsum vero non percoqui nisi trahatum in alias fornaces, et esse nodum ⁵ quendam materiae, id, quod ex cocto supersit, diphryga vocum ratio eius in medicina similis praedictis siccare et excrementa consumere ac repugnare probatur lingua, ut eam siccet tactu statim saporemque aeris reddat

- 137 XXXVIII Unum etiamnum aeris miraculum non omitemus Serviha familia inlustis in fastis trientem aereum pascit auro, argento, consumentem aurumque origo atque natura eius incompeita mihi

¹ marilla *Ian* (*olim* marila) marili *B* maxili *rell*
maxilla *edd vet* debet Facile *Hermolaus Barbarus*

² <sole> vel <aere> aefacto *con* *K C Bailey*

³ sarmentis <accensis> *con* *K C Bailey* s <aridentibus>
con *Harmington*

⁴ *V l* differentiae siquidem differentia est quidem quod
edd vet

⁵ *V l* nudum nucleum *con* *Mayhoff*

copper spits out The floor on which it is received ought to be strewn with charcoal-dust

XXXVII Distinguished from 'smegma' is the substance in the same forges called by the Greeks *diphryx*, from its being twice roasted It comes from three different sources It is said to be obtained from a mineral pyrites which is heated in furnaces till it is smelted into a red earth It is also made in Cyprus from mud obtained from a certain cavern, which is first dried and then gradually has burning brushwood put round it A third way of producing it is from the residue that falls to the bottom in copper furnaces, the difference is that the copper itself runs down into crucibles and the slag forms outside the furnace and the flower floats on the top, but the supplies of *diphryx* remain behind Some people say that certain globules of stone that is being smelted in the furnaces become soldered together and round this the copper gets red hot, but the stone itself is not fused unless it is transferred into other furnaces, and that it is a sort of kernel of the substance, and that what is called *diphryx* is the residue left from the smelting Its use in medicine is similar to that of the substances already described, to dry up moisture and remove excrescent growths and act as a detergent It can be tested by the tongue—contact with it ought immediately to have a parching effect and impart a flavour of copper

XXXVIII We will not omit one further remarkable thing about copper The Servilian family, famous in our annals, possesses a bronze $\frac{1}{3}$ as piece which it feeds with gold and silver and which consumes them both Its origin and nature are un-

est verba ipsa de ea re Messallae senis ponam
 - Seviriorum familia habet tridentem sacrum, cui
 summa cum cura magnificentiaque sacra quotannis
 faciunt quem ferunt alias crevisse, alias decresvisse
 videri et ex eo aut honorem aut diminutionem
 familiae significare

- 138 XXXIX Proxime indicari debent metalli ferri
 optimo pessimoque vitae instrumento est,¹ siquidem
 hoc tellurem scindimus, arbores serimus, arbusta
 tondemus,² vites squalore deciso annis omnibus
 cogimus iuvenescere, hoc extingimus tecta, caedimus
 saxa, omnesque ad alios usus ferro utimur, sed
 eodem ad bella, caedes, latrocinia, non communis
 solum, sed etiam missili volucrique, nunc tormentis
 excusso, nunc lacertis, nunc vero pinnato, quam
 sceleratissimam humani ingenii fraudem arbitror,
 siquidem, ut ocius mors perveniret ad hominem,
 alitem illam fecimus pinnaeque ferro dedimus
 139 quam ob rem culpa eius non naturae fiat accepta
 aliquot experimentis probatum est posse innocens
 esse ferrum in foedere, quod expulsis regibus
 populo Romano dedit Porsina, nominatim compre-
 hensum invenimus, ne ferro nisi in agri cultu uteretur
 et tum³ stilo osseo⁴ scribere institutum vetustissimi
 auctores prodiderunt Magni Pompei in tertio

¹ est add *Mayhoff*

² V l ponemus (p pomaria cd *Flor Ricc ut videtur*
 ponimus p *edd vet*)

³ V l cum

⁴ osseo add *Mayhoff coll Isid VI 9 2*

known to me, but I will put down the actual words of the elder Messala ^a on the subject 'The family of the Servili has a holy coin to which every year they perform sacrifices with the greatest devotion and splendour, and they say that this coin seems to have on some occasions grown bigger and on other occasions smaller, and that thereby it portends either the advancement or the decadence of the family

XXXIX Next an account must be given of the mines and uses of iron. Iron serves as the best and the worst part of the apparatus of life, inasmuch as with it we plough the ground, plant trees, trim the trees that prop our vines, force the vines to renew their youth yearly by ridding them of decrepit growth, with it we build houses and quarry rocks, and we employ it for all other useful purposes, but we likewise use it for wars and slaughter and brigandage, and not only in hand-to-hand encounters but as a winged missile, now projected from catapults, now hurled by the arm, and now actually equipped with feathery wings, which I deem the most criminal artifice of man's genius, inasmuch as to enable death to reach human beings more quickly we have taught them how to fly and have given wings to it. Let us therefore debit the blame not to Nature, but to man. A number of attempts have been made to enable iron to be innocent. We find it an express provision included in the treaty granted by Porsena to the Roman nation after the expulsion of the kings that they should only use iron for purposes of agriculture, and our oldest authors have recorded that in those days it was customary to write with a bone pen. There is extant an edict of Pompey the Great dated

*Iron Its
uses and
misuses*

^a Consul in 53 B C

- consulatu extat edictum in tumultu necis Clodianae
 • prohibentis ullum telum esse in urbe
- 140 XL Et ars antiqua¹ ipsa non defuit honorem
 mitiorem habere ferro quoque Aristonidas artifex,
 cum exprimere vellet Athamantis furorem Lericho
 filio praecipitato residentem paenitentia, res ferrum-
 que miscuit, ut robigine eius per nitorem aeris
 relucente exprimeretur verecundiae rubor hoc
- 141 signum exstat hodie Rhodi² est in eadem urbe et
 ferreus Hercules, quem fecit Alcon laborum dei
 patientia inductus videmus et Romae scyphos e
 ferro dicatos in templo Martis Ultoris obstitit
 eadem naturae benignitas exigentis ab ferro ipso
 poenas robigine eademque providentia nihil in
 rebus mortalis³ facientis⁴ quam quod esset
 infestissimum mortalitati
- 142 XLI Ferri metalla ubique propemodum reperiun-
 tur, quippe et iam⁵ insula Italiae Ilva gignente,
 minimaque difficultate adgnoscentur colore ipso
 terrae manifesto ratio eadem excoquendis venis,
 in Cappadocia tantum quaestio est, aquae an terrae
 fiat acceptum, quoniam perfusa Ceraso⁶ fluvio
 terra neque aliter ferrum e foinacibus reddit
- 143 differentia ferri numerosa prima in genere terrae
 caelive aliae molle tantum plumboque vicinum

¹ ars antiqua *Mayhoff* tamen uiquea *B* (t uique *B*²)
 tamen vita *rell*

² hodie rhodi *B* hodierno die *rell* h d Thebis *Hardouin*
 Thebis hodie *Hermolaus Barbarus*

³ mortalis *B* mortalibus *rell*

⁴ facientis *cd* *deperd Dalecamp* faciente (facientem *cd*
Par 6801, *cd* *Leid Voss*)

⁵ et iam *K C Bailey* etiam

⁶ Ceraso *Urlichs* certo

in his third consulship at the time of the disorders 52 B C
 accompanying the death of Clodius, prohibiting the
 possession of any weapon in the city

XL Further, the art of former days did not fail to
 provide a more humane function even for iron
 When the artist Aristonidas desired to represent the
 madness of Athamas subsiding in repentance after
 he had haled his son Learchus from the rock, he
 made a blend of copper and iron, in order that the
 blush of shame should be represented by rust of the
 iron shining through the brilliant surface of the
 copper, this statue is still standing at Rhodes
 There is also in the same city an iron figure of
 Heracles, which was made by Alcon, prompted by
 the endurance displayed by the god in his labours
 We also see at Rome goblets of iron dedicated in
 the temple of Mars the Avenger The same benevo-
 lence of nature has limited the power of iron itself
 by inflicting on it the penalty of rust, and the same
 foresight by making nothing in the world more
 mortal than that which is most hostile to mortality

XLI Deposits of iron are found almost every-
 where, and they are found even now in the Italian *Iron ores*
and smelt
ing Steel
 island of Elba, and there is very little difficulty in
 recognizing them as they are indicated by the actual
 colour of the earth The method of melting out the
 veins is the same as in the case of copper In
 Cappadocia alone it is merely a question whether the
 presence of iron is to be credited to water or to earth,
 as that region supplies iron from the furnaces when
 the earth has been flooded by the river Cerasus but
 not otherwise There are numerous varieties of
 iron, the first difference depending on the kind of
 soil or of climate—some lands only yield a soft iron

subministrant, aliae fragile et aerosum rotarumque
 usibus et clavis maxime fugiendum, cui prior ratio
 convenit, aliud brevitate sola¹ placet clavisque
 caligarius, aliud robiginem celerius sentit stricturae
 vocantur hae omnes, quod non in aliis metallis, a
 144 stringenda acie vocabulo inposito et fornacium
 magna differentia est, nucleusque quidam ferri
 excoquitur in us ad indurandam aciem, alioque modo
 ad densandas incudes malleorumve rostra summa
 autem differentia in aqua, cui subinde candens
 immergitur haec alibi atque alibi utilior nobilitavit
 loca gloria ferri, sicuti Bilbilim in Hispania et Tunas-
 sonem, Comum in Italia, cum ferraria metalla in us
 145 locis non sint ex omnibus autem generibus palma
 Serico ferro est, Seres hoc cum vestibis suis pelli-
 busque mittunt, secunda Parthico neque alia
 genera ferri ex mera² acie temperantur, ceteris
 enim admiscetur mollior complexus in nostro orbe
 alibi vena bonitatem hanc praestat, ut in Noricis,
 alibi factura, ut Sulmone, aqua alibi ut³ divimus,
 quippe cum⁴ exacuendo oleariae cotes aquariaeque
 146 differant et oleo delicatior fiat acies tenuiora ferra-

¹ bonitate soleis *K C Bailey*

² ex mera *B* ex mira *rell* (ex nimia *cd Vind CCXXXIV*)
eximia edd vet

³ alibi ut *Warmington* uti *edd vet* ubi

⁴ *V l* cum in

^a The Chinese, in fact intermediaries are meant

^b In the MSS this sentence comes after the next one

closely allied to lead, others a brittle and coppery kind that is specially to be avoided for the requirements of wheels and for nails, for which purpose the former quality is suitable, another variety of iron finds favour in short lengths only and in nails for soldiers' boots, another variety experiences rust more quickly. All of these are called 'stricturæ,' 'edging ores,' a term not used in the case of other metals, it is, as assigned to these ores, derived from *stringere aciem*,^x to draw out a sharp edge. There is also a great difference between smelting works, and a certain kind of iron is smelted in them to give hardness to a blade, and by another process to giving solidity to anvils or the heads of hammers. But the chief difference depends on the water in which at intervals the red hot metal is plunged, the water in some districts is more serviceable than in others, and has made places famous for the celebrity of their iron, for instance Bambola and Tarragona in Spain and Como in Italy, although there are no iron mines in those places. But of all varieties of iron the palm goes to the Seric, sent us by the Seres^a with their fabrics and skins. The second prize goes to Parthian iron, and indeed no other kinds of iron are forged from pure metal, as all the rest have a softer alloy welded with them. In our part of the world, in some places the lode supplies this good quality, as for instance in the country of the Norici, in other places it is due to the method of working, as at Sulmona, and in others, as we have said, it is due § 144 to the water, inasmuch as for giving an edge there is a great difference between oil whetstones and water whetstones, and a finer edge is produced by oil. It^b is the custom to quench smaller iron forgings

- menta oleo restingui mos est, ne aqua in fragilitatem
durentur¹ minimeque, cum excoquatur vena, aquae
modo liquari ferrum, postea in spongeas frangi
a ferro sanguis humanus se ulciscitur, contactum
namque eo celerius robiginem trahit
- 147 XLII De magnete lapide suo loco dicemus
concordiaque, quam cum ferro habet soli haec
materia vius² ab eo lapide accipit retinetque longo
tempore, aliud adprehendens ferrum, ut anulorum
catena spectetur interdum quod vulgus imperitum
appellat ferrum vivum, vulneraque talia asperiora
148 fiunt hic lapis et in Cantabria nascitur, non ut
ille magnes verus caute continetur, sed sparsa bulla-
tione³—ita appellant,—nescio an vitio⁴ fundendo
perinde utilis, nondum enim expertus est quisquam,
ferrum utique inficit eadem vi Magnete lapide
architectus Timochares Alexandriae Aisinoes tem-
plum concamarare incohaverat, ut in eo simulacrum
e ferro pendere in aere videretur intercessit ipsius
mois et Ptolemaei regis, qui id sorori suae iusserat
149 fieri XLIII Metallorum omnium vena ferri largis-
sima est Cantabriae maritima parte, qua oceanus
adluit, mons praealtus—incredibile dictu—totus ex
ea materia est, ut in ambitu oceanum diximus

¹ tenuiora durentur post acies transf. Raelham post
frangi habent cdd

² vi vires (vim Isid XVI 21 4)

³ bullatione B bullatione rell

⁴ vitio Hermolaus Barbarus ultro

^a As well as in Magnesia

^b Wife of Ptolemy II, Philadelphus King of Egypt 286-
247 B C

Pliny has not stated this anywhere else But cf IV 112

with oil, for fear that water might harden them and make them brittle. And it is remarkable that when a vein of ore is fused the iron becomes liquid like water and afterwards acquires a spongy and brittle texture. Human blood takes its revenge from iron, as if iron has come into contact with it, it becomes the more quickly liable to rust.

XLII We will speak in the appropriate place about the lode-stone and the sympathy which it has with iron. Iron is the only substance that catches the infection of that stone and retains it for a long period, taking hold of other iron, so that we may sometimes see a chain of rings, the ignorant lower classes call this 'live iron,' and wounds inflicted with it are more severe. This sort of stone forms in Biscaya also ^a not in a continuous rocky stratum like the genuine lodestone alluded to but in a scattered pebbly formation or 'bubbling'—that is what they call it. I do not know whether it is equally useful for glass founding, as no one has hitherto tested it, but it certainly imparts the same magnetic property to iron. The architect Timochares had begun to use lodestone for constructing the vaulting in the Temple of Arsinoë ^b at Alexandria, so that the iron statue contained in it might have the appearance of being suspended in mid air, but the project was interrupted by his own death and that of King Ptolemy who had ordered the work to be done in honour of his sister.

XLIII Iron ore is found in the greatest abundance of all metals. In the coastal part of Biscaya washed by the Atlantic there is a very high mountain which, marvellous to relate, consists entirely of that mineral, as we stated ^c in our account of the lands bordering on the Ocean.

Lode stone
XXXVI
126 sqq

Ferrum accensum igni, nisi duretur ictibus, cor-
 100 umpsitur rubens non est habile tundendo neque
 antequam albescere incipiat aceto aut alumine
 150 initum fit aeri simile a robigine vindicatur cerussa
 et gypso et liquida pice haec est ferro a Graecis
 antipathia dicta ferunt quidem et religione qua-
 dam id fieri et exstare ferrum catenam apud
 Euphraten amnem in urbe, quae Zeugma appellatur,
 qua Alexander Magnus ibi iunxit pontem, cuius
 anulos, qui refectioni sint, robigine infestari, caementibus
 ea prioribus

151 XLIV Medicina e ferro est et alia quam secandi
 namque et circumscribi circulo¹ terve circumlato
 mucrone et adultis et infantibus prodest contra nova
 medicamenta, et praefixisse in limine evulsos sepul-
 chris clavos adversus nocturnas lymphationes, pungi-
 que leviter mucrone, quo percussus homo sit, contra
 dolores laterum pectorumque subitos, qui punctiorem
 adferant quaedam ustione sanantur, privatim vero
 canis rabidi morsus, quippe etiam praevalente morbo
 expavescentes potum usta plaga ilico liberantur
 calfit etiam ferro candente potus in multis vitis,
 privatim vero dysentericis

152 XLV Est et robigo ipsa in remediis, et sic proditur

¹ circulo *B* circulos *rell*

^a See § 175

^b Opposite the modern Birejik

Iron that has been heated by fire is spoiled unless it is hardened by blows of the hammer. It is not suitable for hammering while it is red hot, nor before it begins to turn pale. If vinegar or alum is sprinkled on it it assumes the appearance of copper. It can be protected from rust by means of lead acetate,^a gypsum and vegetable pitch, rust is called by the Greeks 'antipathia,' 'natural opposite' to iron. It is indeed said that the same result may also be produced by a religious ceremony, and that in the city called Zeugma^b on the river Euphrates there is an iron chain that was used by Alexander the Great in making the bridge at that place, the links of which 331 B C that are new replacements are attacked by rust although the original links are free from it.

XLIV Iron supplies another medicinal service *Medicinal uses of iron* besides its use in surgery. It is beneficial both for adults and infants against noxious drugs for a circle to be drawn round them with iron or for a pointed iron weapon to be carried round them, and to have a fence of nails that have been extracted from tombs driven in in front of the threshold is a protection against attacks of nightmare, and a light prick made with the point of a weapon with which a man has been wounded is beneficial against sudden pains which bring a pricking sensation in the side and chest. Some maladies are cured by cauterization, but particularly the bite of a mad dog, inasmuch as even when the disease is getting the upper hand and when the patients show symptoms of hydrophobia they are relieved at once if the wound is cauterized. In many disorders, but especially in dysenteric cases, drinking water is heated with red-hot iron.

XLV The list of remedies even includes rust

- Telephum sanasse Achilles, sive id aerea sive ferrea
 cuspe fecit, ita certe pingitui ex ea decutiens
 gladio suo¹ iobigo ferri deraditui umido ferro
 153 clavis veteribus potentia eius ligare, siccare, sistere
 emendat alopecias inlita utuntur et ad scabities
 genarum pusulasque totius corporis cum cera et
 myrteo oleo, ad ignes vero sacios ex aceto, item
 ad scabiem, paronychia digitorum et pterygia in
 linteolis sistit et feminarum profluvia inposita
 in vellere, utilis² plagis quoque recentibus vino diluta
 et cum muria subacta, condylomatis ex aceto poda-
 gras quoque inlita lenit
 154 XLVI Squama quoque ferri in usu est ex acie aut
 mucronibus, maxime simili, sed aciore vi quam
 iobigo, quam ob rem et contra epiphorias oculorum
 adsumitui sanguinem sistit, cum vulnera ferro
 maxime fiant¹ sistit et feminarum profluvia in-
 ponitur et contra lienum vitia, et haemorrhoidas
 compescit ulcerumque serpentia et genus prodest
 155 farinae modo adpersa paulisper praecipua tamen
 commendatio eius in hygreplastio ad purganda
 vulnera fistulasque et omnem callum ei odendum et
 rasis ossibus carnes recreandas componitui hoc
 modo propolis³ oboli vi, Cimoliae cretae diachmæ
 vi, aënis tusi diachmae ii, squamae ferri⁴ totidem,

¹ suo *K C Barley* sed

² in vellere, utilis *con Mayhoff* velleribus

³ propolis *Mayhoff* (coll XXII 107, *Scribon*, 209) qui et
 galbani vel panacis *con pal B* pari vell panis *Ian*
 aluminis *con Sillig* picis *Hardoun*

⁴ V l ferreae

itself, and this is the way in which Achilles is stated to have cured Telephus, whether he did it by means of a copper javelin or an iron one, at all events Achilles is so represented in painting, knocking the rust off a javelin with his sword. Rust of iron is obtained by scraping it off old nails with an iron tool dipped in water. The effect of rust is to unite wounds and dry them and staunch them, and applied as a liniment it relieves fox-mange. They also use it with wax and oil of myrtle for scabbiness of the eye-lids and pimples in all parts of the body, but dipped in vinegar for erysipelas and also for scab, and, applied on pieces of cloth, for hangnails on the fingers and whitlows. Applied on wool it arrests women's discharges and for recent wounds it is useful diluted with wine and kneaded with myrrh, and for swellings round the anus dipped in vinegar. Used as a liniment it also relieves gout.

XLVI Scale of iron, obtained from a sharp edge or point, is also employed, and has an effect extremely like that of rust only more active, for which reason it is employed even for running at the eyes. It arrests hæmorrhage, though it is with iron that wounds are chiefly made! And it also arrests female discharges. It is also applied against troubles of the spleen, and it checks hæmorrhoidal swellings and creeping ulcers. Applied for a brief period in the form of a powder it is good for the eyelids. But its chief recommendation is its use in a wet plaster for cleaning wounds and fistulas and for eating out every kind of callosity and making new flesh on bones that have been denuded. The following are the ingredients: six obols of bee-glue, six drams of Cimolo earth,^a two drams of pounded copper, two of

cerae v,¹ olei sextarius his adicitur, cum sunt repugnanda vulnera aut replenda, ceratum

- l. 6 XLVII Sequitur natura plumbi, cuius duo genera, nigrum atque candidum pretiosissimum in² hoc candidum, Graecis appellatum cassiterum fabuloseque narratum in insulas Atlantici maris peti vitibusque navigis et circumsutis corio advehi nunc certum est in Lusitania gigni et in Gallaecia summa
157 tellure, harenosa et coloris nigri pondere tantum ea deprehenditur, interveniunt et minuti calculi, maxime torrentibus siccatis lavant eas harenas metallici et, quod subsedit, cocunt in foinacibus invenitur et in aurariis metallis, quae alutias³ vocant, aqua immissa eluente calculos nigras paullum candore variatos, quibus eadem gravitas quae auro, et ideo in catillis⁴ quibus aurum colligitur, cum eo remanent, postea caminis separantur conflatique in plumbum
158 album resolvuntur non fit in Gallaecia nigrum, cum vicina Cantabria nigro tantum abundet, nec ex albo argentum, cum fiat ex nigro iungi inter se plumbum nigrum sine albo non potest nec hoc ei sine oleo ac ne album quidem secum sine nigro album habuit auctoritatem et Iliacis temporibus teste
159 Homero, cassiterum ab illo dictum plumbi nigri

¹ v *Mayhoff* XL B¹ vi B² ex aut sex *rell*

² in *add Mayhoff*

³ alutias B alutia aut aluta *rell*

⁴ catillis *Warmington* scutulis *Urlichs* calathis *cd Par*
6801 *recte* ? calatis aut colatis aut cloacis *rell* (cutalis B)

^a Pliny's 'black lead' is lead, and his 'white lead' is tin. Neither must be confused with the 'black lead' and 'white lead' of modern usage.

^b Or, if we read *calathi*, 'baskets'.

scale of non, ten of wax and a pint of oil When it is desired to cleanse or fill up wounds, wax plaster is added to these ingredients

XLVII The next topic is the nature of lead, of ^{lead and} ^{tin} which there are two kinds, black and white ^a White lead (tin) is the most valuable, the Greeks applied to it the name *cassiteros*, and there was a legendary story of their going to islands of the Atlantic ocean to fetch it and importing it in platted vessels made of osiers and covered with stitched hides It is now known that it is a product of Lusitania and Gallaecia found in the surface striata of the ground which is sandy and of a black colour It is only detected by its weight, and also tiny pebbles of it occasionally appear, especially in dry beds of torrents The miners wash this sand and heat the deposit in furnaces It is also found in the goldmines called 'alutæ,' through which a stream of water is passed that washes out black pebbles of tin mottled with small white spots, and of the same weight as gold, and consequently they remain with the gold in the bowls ^b in which it is collected, and afterwards are separated in the furnaces, and fused and melted into white lead Black lead does not occur in Gallaecia, although the neighbouring country of Biscaya has large quantities of black lead only, and white lead yields no silver, although it is obtained from black lead Black lead cannot be soldered with black without a layer of white lead, nor can white be soldered to black without oil, nor can even white lead be soldered with white without some black lead Homer testifies Π XI 25 that white lead or tin had a high position even in the XVIII 5 Trojan period, he giving it the name of *cassiteros* 574, 613, There are two different sources of black lead, as it is XIII, 5

origo duplex est, aut enim sua provenit vena nec quicquam aliud ex sese, parit aut cum argento nascitur mixtisque venis conflatur huius qui primus fuit in foinacibus liquor stagnum appellatur, qui secundus, argentum, quod remansit in foinacibus, galena, quae fit tertia portio additae venae, haec iursus conflata dat nigrum plumbum deductis partibus nonis II

- 160 XLVIII Stagnum inlitum aereis vasis saporem facit gratiores ac compescit virus aeruginis, mirumque, pondus non auget specula etiam ex eo laudatissima, ut diximus, Brundisi temperabantur, donec argenteis uti coepere et ancillae nunc adulteratur stagnum addita aeris candidi tertia portione in plumbum album fit et alio modo mixtis albi plumbi nigrique libris, hoc nunc aliqui argentarium appellant idem et tertiarium vocant, in quo duae sunt nigri portiones et tertia albi pretium eius in libris X $\lambda\lambda$ ¹ hoc fistulae solidantur
- 161 improbiores ad tertiarium additis partibus aequis albi argentarium vocant et eo quae volunt incoquant pretium² huius faciunt in p X $\lambda\lambda$ ³ albo per se sincero pretium⁴ sunt X $\lambda\lambda\lambda$,⁵ nigro X VII⁶

Albi natura plus auri habet, contraque nigri tota

¹ $\lambda\lambda\lambda$ B $\lambda\lambda\lambda$ rell (X X cd Par Lat 6797)

² VI pretia (pretio cl Leid Ioss)

³ $\lambda\lambda\lambda$ /// B² varia cdd ⁴ VI pretia

⁵ $\lambda\lambda\lambda\lambda$ B varia cdd

⁶ X VII cd Chiff apud Dalecamp XVII rell

^a The mixture is *galena* or sulphide of lead, the commonest lead ore, for which, see XXXIII, 95

^b Or *stannum*, alloy of silver and lead

^c *Galena* is here crude or impure lead not the modern galena or sulphide of lead for which see LXXIII 95

^d Brass

either found in a vein of its own and produces no other substance mixed with it, or it forms together with silver, and is smelted with the two veins mixed together ^a. Of this substance the liquid that melts first in the furnaces is called *stagnum* ^b, the second liquid is argentiferous lead, and the residue left in the furnaces is impure lead ^c which forms a third part of the vein originally put in, when this is again fused it gives black lead, having lost two-ninths in bulk ^d.

XLVIII When copper vessels are coated with *stagnum* the contents have a more agreeable taste and the formation of destructive verdigris is prevented, and, what is remarkable, the weight is not increased. Also, as we have said, it used to be employed at BUNDISI as a material for making ^{XXVII 1} ¹³⁾ mirrors which were very celebrated, until even servant-maids began to use silver ones. At the present day a counterfeit *stagnum* is made by adding one part of white copper ^a to two parts of white lead, and it is also made in another way by mixing together equal weights of white and black lead. The latter compound some people now call 'silver mixture'. The same people also give the name of 'tertiary' to a compound containing two portions of black lead and one of white, its price is 20 denarii a pound. It is used for soldering pipes. More dishonest makers add to tertiary an equal amount of white lead and call it 'silver mixture,' and use it melted for plating by immersion any articles they wish. They put the price of this last at 70 denarii for 1 lb. the price of pure white lead without alloy is 80 denarii, and of black lead 7 denarii.

The substance of white lead has more diness,

umida est ideo album nulli rei sine mixtura utile
 est neque argentum ex eo plumbatum, quoniam
 162 pius liquescat argentum, confirmantque, si minus
 albo nigri, quam satis sit, misceatur, erodi ab eo
 argentum album incoquitur aereis operibus Gal-
 liaum invento ita, ut vix discerni possit ab argento,
 eaque incoctilia appellant deinde et argentum
 incoquere simili modo coepere equorum maxime
 ornamentis iumentorumque ac iugorum in Alesia
 163 oppido, reliqua gloria Biturigum fuit coepere
 deinde et esseda sua colisataque ac petonita exornare
 simili modo, quae iam luxuria ad aurea quoque, non
 modo argentea, staticula¹ pervenit, quaeque in
 scyphis cerni prodigium² erat, haec in vehiculis adtem-
 cultus vocatur

plumbi albi experimentum in charta est, ut lique-
 factum pondere videatur, non calore, rupisse India
 neque aes neque plumbum habet gemmisque et
 margaritis suis haec permutat

164 XLIX Nigro plumbo ad fistulas lamnasque utimur,
 laboriosius in Hispania eruto totasque per Gallias,
 se din Britannia summo teriae corio adeo laege, ut
 lex interdicit ut³ ne plus certo modo fiat nigri

¹ vehicula *cd Par 6801, cd Par Jat 6797, m 2 in ras*

² V l prodigium

³ lex interdicit ut *M Hertz* lex ultro dicatur *cdl* lex
 cavere dicatur *Urlichs* lex custodiatur *Detlefsen* lege
 interdicitur *Brunn* nec interdicitur *coni Mayhoff*

^a But silver does *not* melt sooner than 'white lead' (tin)
 Perhaps some alloy is meant here

^b At Mont Auxois near Alise

whereas that of black lead is entirely moist. Consequently white lead cannot be used for anything without an admixture of another metal, nor can it be employed for soldering silver, because the silver melts before the white lead^a. And it is asserted that if a smaller quantity of black lead than is necessary is mixed with the white, it corrodes the silver. A method discovered in the Gallic provinces is to plate bronze articles with white lead so as to make them almost indistinguishable from silver, articles thus treated are called 'incoctilia'. Later they also proceeded in the town Alesia^b to plate with silver in a similar manner, particularly ornaments for horses and pack animals and yokes of oxen, the distinction of developing this method belongs to Bordeaux. Then they proceeded to decorate two-wheeled war-chariots, chaises and four-wheeled carriages in a similar manner, a luxurious practice that has now got to using not only silver but even gold statuettes, and it is now called good taste to subject to wear and tear on carriages ornaments that it was once thought extravagant to see on a goblet!

It is a test of white lead when melted and poured on papyrus to seem to have burst the paper by its weight and not by its heat. India possesses neither copper nor lead, and procures them in exchange for her precious stones and pearls.

XLIX. Black lead which we use to make pipes and sheets is excavated with considerable labour in Spain and through the whole of the Gallic provinces, but in Britain it is found in the surface-stratum of the earth in such abundance that there is a law prohibiting the production of more than a certain amount. The various kinds of black lead

- generibus haec sunt nomina Ovetanum,¹ Capiariense, Oleastiense, nec differentia ulla scoria modo excocti diligenter minium in his solis metallis, quod delecta fertilius revivescunt hoc videtur facere lavatis spuamentis ad satietatem infusus aei, aequae ut feminas quasdam fecundiores facere abortus nuper id conperitum in Baetica Salutariensi² metallo, quod locum solitum X CC³ annuis, postquam oblitteratum erat, X CCIV⁴ locatum est simili modo Antonianum in eadem provincia pari locatione pervenit ad HS CCC vectigalis minium et addita aqua non liquescere vasa e plumbo, eadem, si in aquam⁵ adduntur calculus vel aereus quadans, perunt
- 166 L In medicina per se plumbi usus cicatrices reprimere adalligatisque lumboium et renium parti lamnis frigidiore natura inhibere inpetus venenis visaque in quiete venena sponte naturae eumpentia usque in genus morbi his lamnis Calvus orator cohibuisse se traditum vnesque corporis studiorum labori custodisse Nero, quoniam ita placuit dñs, princeps, lamna pectori imposita sub ea cantica exclamans alendis vocibus demonstravit rationem
- 167 coquitur ad medicinae usus patinis fictilibus substrato sulphure minuto, lamnis impositis tenuibus

¹ Ovetanum *Hardoun* iovetanum *B* iovetantum *rell*

² Salutariensi *coni Mayhoff* samariensi *B* santarensi *aut samiarensi aut saremanensi rell*

³ CC *Ian* CC *M cd Leid Voss, cd Flor Ricc* ² (CCC *Ricc* ¹) CC *rell*

⁴ X CCLV *Mayhoff* varia *add et edd*

⁵ in aquam *C F W Müller* sine aqua *K C Bailey coni Mayhoff* cum aqua

^a Not true *K C Bailey* suggests *si sine aqua* and translates 'a hole is burnt in the same vessels if filled with pebbles or copper coins instead of water'

have the following names—Oviedo lead, Ciprura lead, Oleastium lead, though there is no difference between them provided the slag has been carefully smelted away. It is a remarkable fact in the case of these mines only that when they have been abandoned they replenish themselves and become more productive. This seems to be due to the air infusing itself to saturation through the open offices, just as a miscarriage seems to make some women more prolific. This was recently observed in the Salutariensian mine in Bætica, which used to be let at a rent of 200,000 denarii a year, but which was then abandoned, and subsequently let for 255,000. Likewise the Antonian mine in the same province from the same rent has reached a return of 400,000 sesterces. It is also remarkable that vessels made of lead will not melt if they have water put in them, but if to the water a pebble or quarter-as coin is added, the fire burns through ^a the vessel.

L In medicine lead is used by itself to remove scabs, and leaden plates are applied to the region of the loins and kidneys for their comparative chilly nature to check the attacks of venereal passions, and the libidinous dreams that cause spontaneous emissions to the extent of constituting a kind of disease. It is recorded that the pleader Calvus used these plates to control himself and to preserve his bodily strength for laborious study. Nero, whom heaven was pleased to make emperor, used to have a plate of lead on his chest when singing songs *fortissimo*, thus showing a method for preserving the voice. For medical purposes lead is melted in earthen vessels, a layer of finely powdered sulphur being put underneath it, on this thin plates are

*Medical
uses of
lead*

PLINY NATURAL HISTORY

opertisque sulphure, veru felleo¹ mixtis cum co-
quatur,² munienda in eo, opere foramina spiritus
convenit, alioqui plumbi fornacium halitus novius
sentitur et pestilens, nocet³ canibus ocissime,
omnium vero metallorum muscis et culicibus, quam
ob rem non sunt ea taedia in metallis

- 168 Quidam in coquendo scobem plumbi lima quaesitam
sulphuri miscent, alii cerussam potius quam sulphur
fit et lotura plumbi usus in medicina cum se ipso
teritur in mortario plumbeis addita aqua caelesti,
donec crassescat, postea supernatans aqua tollitur
spongeis, quod crassissimum fuit, siccatum dividitur
in pastillos quidam limatum plumbum sic terunt,
quidam et plumbaginem admiscent, alii vero acetum,
169 alii vinum, alii adipem, alii rosam quidam in
lapideo mortario et maxime Thebaico plumbum
pistillo lapideo⁴ tereere malunt, candidiusque ita
fit medicamentum id autem quod ustum est
plumbum lavatur ut stibis et cadmea potest
adstringere, sistere, contrahere cicatrices, usu est⁵
eodem et in oculorum medicamentis, maxime contra
proidentiam eorum et manitates ulcerum excre-
scentiae rimasque sedis aut haemorrhoidas et con-
170 dylomata ad haec maxime lotura plumbi facit

¹ veru ferreo conr *Mayhoff* et ferro aut est et foro

² coquuntur conr *Mayhoff*

³ nocet *Warmington* est *Mayhoff* et

⁴ plumbum (*Ulrichs*) pistillo (e *cd Par Lat 6797*) lapideo
(coll *Diosc*) *K C Bailey* plumbeum pistillum aut plumbeo
pistillum *edd* (pistillo *cd Par Lat 6797*)

⁵ usu est *Mayhoff* usus et *edd* usus enim ex *ed rett*
usus ex *Sillig*

^a See XXXIII, 98

^b See § 175

^c Not it seems the plant lead wort Cf *Dioscorides*, V, 95,

lud and covered with sulphur and stirred up with
in non spit While it is being melted, the breathing
passages should be protected during the operation,
otherwise the noxious and deadly vapour of the lead
furnace is inhaled it is hurtful to dogs with special
rapidity,^a but the vapour of all metals is so to flies
and gnats, owing to which those annoyances are not
found in mines

Some people during the process of smelting mix
lead-filings with the sulphur, and others use lead
acetate^b in preference to sulphur Another use of
lead is to make a wash—it is employed in medicine—
pieces of lead with rainwater added being ground
against themselves in leaden mortars till the whole
assumes a thick consistency, and then water floating
on the top is removed with sponges and the very thick
sediment left when dry is divided into tablets Some
people grind up lead filings in this way and some also
mix in some lead ore,^c but others use vinegar, others
wine, others grease, others oil of roses Some prefer
to grind the lead with a stone pestle in a stone mortar,
and especially one made of Thebes stone,^d and this
process produces a drug of a white colour Calcined
lead is washed like antimony and *cadmea*^e It has
the property of acting as an astringent and arresting
hæmorrhage and of promoting cicatrization It is of
the same utility also in medicines for the eyes,
especially as preventing their prociidence, and for
the cavities or excrescences left by ulcers and for
fissures of the anus or hæmorrhoids and swellings of
the anus For these purposes lead lotion is ex-

^a Cf XXXIII, 68, XXXIV, 106, XXXVI, 63, 157

^b See XXXIII, 103, XXXIV, 100-104

cinis autem usti ad serpentina ulcera aut sordida, eademque quae chalcitis¹ ratio profectus uritui autem in patinis per lamnas minutas cum sulphure, versatum iudibus ferreis aut ferulaceis, donec liquor mutetur in cinerem, dein refrigeratum teritur in farinam alii elmatam scobem in fictili crudo cocunt in caminis, donec percoquatur figlinum aliqui cerussam admiscent pari mensura aut hordeum teruntque ut in crudo² dictum est, et praeferunt sic plumbum spodio Cyprio

171 LI Scorina quoque plumbi in usu est optima quae maxime ad luteum colorem accedit, sine plumbi reliquis aut sulphuris, specie terrae³ caiens lavatur haec in mortaris minutim fiacta, donec aqua luteum colorem trahat, et transfunditur in vas purum, idque saepius, usque dum subsadat quod utilissimum est effectus habet eosdem quos plumbum, sed acriores minarique succurrit experientiam⁴ vitae, ne faece quidem rerum excrementorumque foeditate intemptata tot modis

172 LII Fit et spodium ex plumbo eodem modo quo ex Cyprio aere, lavatur in linteis raris aqua caelesti separaturque terrenum transfusione, cribratum teritur quidam pulverem eum pinnis digerere malunt ac terere in vino odorato

¹ chalcitidis *con* Mayhoff

² in crudo *cdd* supra *con* K C Barley

³ specie terrae B et terra *rell*

⁴ experientia B

^a For the medicinal use of burnt papyrus see X XIV, 88

^b See § 175

^c Some kind of litharge

timely efficient, while for creeping or foul ulcers ash of calcined lead is useful, and the benefit they produce is on the same lines as in the case of sheets of papyrus^a. The lead is burnt in small sheets mixed with sulphur, in shallow vessels, being stired with iron rods or fennel stalks till the molten metal is reduced to ashes, then after being cooled off it is ground into powder. Another process is to boil lead filings in a vessel of raw earth in furnaces till the earthenware is completely baked. Some mix with it an equal amount of lead acetate^b or of bailey and grind this mixture, in the way stated in the case of § 168 raw lead, and prefer the lead treated in this way to the Cyprus slag.

LI The dross of lead is also utilized. The best is that which approximates in colour most closely to yellow, containing no remnants of lead or sulphur, and does not look earthy. This is broken up into small fragments and washed in mortars till the water assumes a yellow colour, and poured off into a clean vessel, and the process is repeated several times till the most valuable part settles as a sediment at the bottom. Lead dross has the same effects as lead, but to a more active degree. This suggests a remark on the marvellous efficacy of human experiment, which has not left even the dregs of substances and the foulest refuse untested in such numerous ways!

LII Slag^c is also made from lead in the same way as from Cyprus copper, it is washed with rain § 128 *sqq* water in linen sheets of fine texture and the earthy particles are got rid of by rinsing, and the residue is sifted and then ground. Some prefer to separate the powder with a feather, and to grind it up with aromatic wine.

- 173 LIII Est et molybdaena, quam alio loco galenam appellavimus, vena argepti plumbique communis melior haec, quanto magis aurei coloris quantoque minus plumbosa, fiabilis et modice gravis cocta cum oleo iocineris colorem trahit adhaerescit et auri argentique foinacibus, hanc metallicam vocant laudatissima quae in Zephyrio fiat, probantur minime
- 174 terrenae minimeque lapidosae coquuntur lavanturque scoriae modo usus in lipara ad lenienda ac refrigeranda ulcera et emplastris, quae non inligantur sed inlita ad cicatricem perducunt in teneris corporibus mollissimisque partibus compositio eius e libris III et ceræ libra, olei III heminis, quod in simili corpore cum fiacibus additur temperatur cum spuma argenti et scorra plumbi ad dysenteriam et tenesum fovenda calida
- 175 LIV Psimithium quoque, hoc est cerussam, plumbariae dant officinae, laudatissimam in Rhodo fit autem iamentis plumbi tenuissimis super vas acetum asperitum inpositis atque ita destillantibus quod ex eo cecidit in ipsum acetum, arefactum molitur et cribiatur iterumque aceto admixto in pastillos dividitur et in sole siccatur aestate fit et alio modo, addito in urceos acetum plumbo opturatos per dies 14 derasoque ceu situ ac rursus reiecto, donec deficiat

^a In this word Pliny includes two things (1) a mineral which is lead sulphide (still called galena) or perhaps lead oxide, and (2) an artificial product which is litharge. Both Pliny and Dioscorides call the mineral yellow, which is true of litharge but not of lead sulphide. So the mineral may be the yellow or yellowish red massicot (K. C. Bailey)

^b Sugar of lead, not the modern basic lead carbonate or 'white lead'

LIII There is also *molybdaena*^a (which in another place we have called *galena*), it is a mineral compound of silver and lead. It is better the more golden its colour and the less leaden it is friable and of moderate weight. When boiled with oil it acquires the colour of liver. It is also found adhering to furnaces in which gold and silver are smelted, in this case it is called metallic sulphide of lead. The kind most highly esteemed is produced at Zephyrium. Varieties with the smallest admixture of earth and of stone are approved of, they are melted and washed like dross. It is used in preparing a particular emollient plaster for soothing and cooling ulcers and in plasters which are not applied with bandages but which they use as a liniment to promote cicatrization on the bodies of delicate persons and on the more tender parts. It is a composition of three pounds of sulphide of lead and one of wax with half a pint of oil, which is added with solid lees of olives in the case of an elderly patient. Also combined with scum of silver and dross of lead it is applied warm for fomenting dysentery and constipation.

LIV '*Psamthium*' also, that is cerussa or lead acetate,^b is produced at lead-works. The most highly spoken of is in Rhodes. It is made from very fine shavings of lead placed over a vessel of very sour vinegar and so made to drip down. What falls from the lead into the actual vinegar is dried and then ground and sifted, and then again mixed with vinegar and divided into tablets and dried in the sun, in summertime. There is also another way of making it, by putting the lead into jars of vinegar kept sealed up for ten days and then scraping off the sort of decayed metal on it and putting it back in

^a *Molybdaen.*

XXXIII,

95

XXXIV,

159

^b *Sugar of lead*

PLINY NATURAL HISTORY

176 materia quod deasum est, teritui et cūbratui et coquitui in patinis misCeturque iudiculis, donec rufescat et simile sandaracae fiat dein lavatui dulci aqua, donec nubeculae omnes eluantui siccatui postea similiter et in pastillos dividitui vis eius eadem quae supra dictis, lenissima tantum ex omnibus, praeterique ad candorem feminarium est autem letalis potu sicut spuma argenti postea cerussa ipsa, si coquatur, rufescit

177 LV Sandaracae quoque propemodum dicta natura est inventui autem et in aurariis et in argentariis metallis, meliori quo magis rufa quoque magis vius sulphuris¹ redolens ac pura friabilisque valet purgare, sistere, excalfacere, erodere, summa eius dote septica explet alopecias ex aceto inliti, additur oculorum medicamentis, fauces purgat cum melle sumpta vocemque limpidam et canoram facit, suspensiosis et tussientibus iucunde medetur cum resina terebinthina in cibo sumpta, suffita quoque cum cedro ipso odore isdem medetur

178 LVI Et arrhenicum ex eadem est materia quod optimum, coloris etiam in auro excellentis, quod vero pallidius aut sandaracae simile est, deterius iudicatur est et tertium genus, quo miscetur aureus color sandaracae utraque haec squamosa,

¹ sulphuris *ald Mayhoff*

^a Red sulphide of arsenic

^b Yellow sulphide of arsenic

the vinegar, till the whole of it is used up. The stuff scraped off is ground up and sifted and heated in shallow vessels and stirred with small rods till it turns red and becomes like *sandarach*, realgar^a. Then it is washed with fresh water till all the cloudy impurities have been removed. Afterwards it is dried in a similar way and divided into tablets. Its properties are the same as those of the substances mentioned above, only it is the mildest of them all, and beside that, it is useful for giving women a fair complexion, but like scum of silver, it is a deadly poison. The lead acetate itself if afterwards melted becomes red.

LV Of realgar also the properties have been almost completely described. It is found both in goldmines and silvermines, the redder it is and the more it gives off a poisonous scent of sulphur and the purer and more friable it is, the better it is. It acts as a cleanser, as a check to bleeding, as a caustic and a caustic, being most remarkable for its corrosive property, used as a liniment with vinegar it removes fox-mange, it forms an ingredient in eye-washes, and taken with honey it cleans out the throat. It also produces a clear and melodious voice, and mixed with turpentine and taken in the food, is an agreeable remedy for asthma and cough, its vapour also remedies the same complaints if merely used as a fumigation with cedar wood.

LVI Oipiment^b also is obtained from the same substance. The best is of a colour of even the finest-coloured gold, but the paler sort or what resembles sandarach is judged inferior. There is also a third class which combines the colours of gold and of sandarach. Both of the latter are scaly, but

PLINY NATURAL HISTORY

illud vero siccum purumque, gracili venarum discursu
fissile vis eadem quae supia, sed acior itaque
et causticis additum et psilotus tollit et pterygia
digitorum carnesque narium et condylomata et
quidquid excrescit torretur, ut valdius¹ prosit, in
nova testa, donec mutet colorem

¹ valdius *B* valdius *rell*

NOTE ON XXXIV 17 AND 70

The group of two figures (representing Harmodius and Aristogeiton) made by Antenor in bronze set up at Athens in 510-9 B C, was carried off by Xerxes in 480, and a new bronze pair was made by Critius and Nesiotes and set up at Athens in 477. Antenor's group was found by Alexander in Persia, and on his orders, it seems, one of his successors c. 293-2 restored it to Athens, part of the original base of Critius' and Nesiotes' group, it seems, has now been found, the marble group now at Naples is thought to be a Roman copy of the same group and made in the 2nd cent. A D. The bearded head of Aristogeiton can be restored from a head in the Vatican. Copies of this group can be seen on four Attic vases of the first half of the fifth century B C (Beazley, *Journal of Hellenic Studies* LXVIII (1948), 28), and one of about 400 B C (W. Hahland, *Vasen um Merdias*, p. 6 and pl. 6a).

the other is dry and pure, and divided in a delicate tracery of veins. Its properties are the same as mentioned above, but more active. Accordingly it is used as an ingredient in cauteries and depilatories. It also removes overgrowths of flesh on to the nails, and pimples in the nostrils and swellings of the anus and all excrescences. To increase its efficacy it is heated in a new earthenware pot till it changes its colour.

also in the sketch in low relief on a marble throne now at Broomhall. Other copies of Critius' and Nesiotes' work such as that on a coin of Cyzicus c. 420 B.C., those on Athena's shield depicted on three Attic amphorae of c. 400 B.C. (or a later date), and that on an Athenian tetradrachm of c. 400 B.C., are probably imitations made from memory. C. Seltman's opinion that the Broomhall relief suggests a copy of Antenor's group is doubtful (Seltman, *Journ. of Hellen. Stud.*, LXVII (1947), 22-27). The group made by Praxiteles (Pliny, XXXIV 70) was no doubt a fresh creation of his own unless there is some blunder on Pliny's part.

BOOK XXXV

LIBER XXXV

1 Metallorum, quibus opes constant, adgnascentiumque us natura indicata propemodum est, ita conexis rebus, ut immensa medicinae silva officinarumque tenebrae et morosa caelandi fingendique ac tingendi subtilitas simul dicerentur restant teriae ipsius genera lapidumque vel numerosiore¹ serie,² plurimis singula a³ Graecis praecipue voluminibus tractata nos in us brevitatem sequemur utilem instituto, modo nihil necessarium
2 aut naturale omittentes, primumque dicemus quae restant de pictura, arte quondam nobili—tunc cum expeteretur regibus populisque—et alios nobilitante, quos esset dignata posteris tradere, nunc vero in totum marmoribus pulsa, iam quidem et auro, nec tantum ut parietes toti operiantur, verum et interrasso marmore vermiculatisque ad effigies rerum et
3 animalium crustis non placent iam abaci nec spatia montes in cubiculo dilatantia⁴ coepimus et lapidem⁵ pingere hoc Claudii principatu inventum, Neionis

¹ numerosiore *Gelen* numerosiores

² serie *Gelen* seriae *B* eae aut aerae aut sim *vell*

³ *et fortasse delendum* (*Mayhoff*)

⁴ dilatata *con Ian* dilatant iam *Detlefsen*

⁵ lapidem *cd Par I at 6797, cd Par 6801* lapide *vell*

^a This translates *lapidem*. If we read *lapide* 'with stone,' Pliny would mean a kind of mosaic. But see §§ 116, 118

BOOK XXXV

I We have now practically indicated the nature of metals, in which wealth consists, and of the substances related to them, connecting the facts in such a way as to indicate at the same time the enormous topic of medicine and the mysteries of the manufactories and the fastidious subtlety of the processes of carving and modelling and dyeing. There remain the various kinds of earth and of stones, forming an even more extensive series, each of which has been treated in many whole volumes, especially by Greeks. For our part in these topics we shall adhere to the brevity suitable to our plan, yet omitting nothing that is necessary or follows a law of Nature. And *Painting* first we shall say what remains to be said about painting, an art that was formerly illustrious, at the time when it was in high demand with kings and nations and when it ennobled others whom it deigned to transmit to posterity. But at the present time it has been entirely ousted by marbles, and indeed finally also by gold, and not only to the point that whole party-walls are covered—we have also marble engraved with designs and embossed marble slabs carved in wriggling lines to represent objects and animals. We are no longer content with panels nor with surfaces displaying broadly a range of mountains in a bedchamber, we have begun even to paint on the masonry.^a This was invented in the

veio maculas, quae non essent in crustis, inserendo unitatem variare ut oratus esset Numidicus, ut purpura distingueretur Synnadicus, qualiter illos nasci optassent deliciae montium haec subsidia deficientium, nec cessat luxuria id agere, ut quam plurimum incendius perdat

- 4 II Imaginum quidem pictura, qua maxime similes in aevum propagabantur figurae, in totum exolevit aerei ponuntur clipei argentea facie,¹ sudo figurarum discrimine, statuarum capita permittuntur, volgatis iam pridem salibus etiam carminum adeo materiam conspici malunt omnes quam se nosci, et inter haec pinacothecas veteribus tabulis consuunt² alienasque effigies colunt, ipsi honorem non nisi in pretio
5 ducentes, ut frangat heres forasque³ detrahat laqueo⁴ itaque nullus effigie vivente imagines pecuniae, non suas, relinquunt iidem palaestrae⁵ athletarum imaginibus et ceromata sua exornant, Epicuri voltus per cubicula gestant ac circumferunt secum natali eius sacrificant, feriasque omni mense vicesima luna⁶

¹ argentea facie *Mayhoff* argenteae facies

² conferunt *quidam* apud *Dalecamp* complent *coni Mayhoff*

³ forasque *cd Par* 6801 furisque *rell* forisque *Detlefsen* furisque *coni Brotier*

⁴ laqueo *Detlefsen* laqueis *Urlichs* laqueū *aut* laqueūs

⁵ palaestrae *coni Mayhoff* palaestras

⁶ vicesima luna *hic Mayhoff* post custodiunt *Ian* post eius *cdd*

^a Of Synnada in Phrygia in Asia Minor

^b So that heads were put on bodies which did not belong to them

^c *Ceromata*, Greek for wax ointments used by athletes, and also denoting the rooms where these were applied before or after a match

^d Greek *εικάς*, 20th day

princirate of Claudius, while in the time of Nero a plan was discovered to give variety to uniformity by inserting markings that were not present in the embossed marble surface, so that Numidian stone might show oval lines and Synnadie^a marble be picked out with purple, just as fastidious luxury would have liked them to be by nature. These are our resources to supplement the mountains when they fail us, and luxury is always busy in the effort to secure that if a fire occurs it may lose as much as possible

II The painting of portraits, used to transmit through the ages extremely correct likenesses of persons, has entirely gone out. Bronze shields are now set up as monuments with a design in silver, with a dim outline of men's figures, heads of statues are exchanged for others,^b about which before now actually sarcastic epigrams have been current. so universally is a display of material preferred to a recognizable likeness of one's own self. And in the midst of all this, people tapestry the walls of their picture-galleries with old pictures, and they prize likenesses of strangers, while as for themselves they imagine that the honour only consists in the price, for then hen to break up the statue and haul it out of the house with a noose. Consequently nobody's likeness lives and they leave behind them portraits that represent their money, not themselves. The same people decorate even their own anointing-rooms^c with portraits of athletes of the wrestling-ring, and display all round their bedrooms and carry about with them likenesses of Epicurus, they offer sacrifices on his birthday, and keep his festival which they call the *eikas*^d on the 20th day of every

AD 11-54-68

Portraits

custodiunt, quas icadas vocant, et maxime, qui se ne
 viventes quidem nosci volunt ita est profecto
 aites desidia perdidit, et quoniam animorum imagines
 6 non sunt, negleguntur etiam corporum aliter apud
 maiores in atriis haec erant, quae spectarentur, non
 signa externorum artificum nec aera aut marmora
 expressi cera vultus singulis disponebantur ai-
 maius, ut essent imagines, quae comitarentur
 gentilicia funera, semperque defuncto aliquo totus
 aderat familiae eius qui umquam fuerat populus
 stemmata vero lineis¹ discurrebant ad imagines
 7 pictas tabulina codicibus implebantur et monumentis
 ieiun in magistratu gestarum aliae foris et circa
 limina animorum ingentium imagines erant adfixis
 hostium spolis, quae nec emptori refigere liceret,
 triumphabantque etiam dominis mutatis aeternae²
 domus erat haec stimulatio³ ingens, exprobiantibus
 tectis cotidie inbellem dominum intrare in alienum
 8 triumphum exstat Messalae orationis indignatio,
 quae prohibuit inseri genti suae Laeviniorem alienam
 imaginem similis causa Messalae seni expressit
 volumina illa quae de familiis condidit, cum Scipionis
 Pomponiani transisset atrium vidissetque adoptione
 testamentaria Salvittones—hoc enim fuerat cogno-

¹ linteis *Frohnner coll* 51

~ aeternae *Mayhoff* ipsae *Gelen* emptae *Ian, Ulrichs*
 tamen *con Silhg* et me *cdd* (etiā *B*²)

³ stimulatio *Gelen* stimmatio *B*¹ estimatio (*deleto* haec)
B stima ratio *rell* (summa *r cd Par Lat* 6797)

^a A maxim of Epicurus was *Λαθε βίωσας* 'live unnoticed'

^b In private houses

^c A branch of the Gens Valeria, to which the Messalae also belonged

month—these of all people, whose desne it is not to be known even when alive^a! That is exactly how things are indolence has destroyed the arts, and since our minds cannot be portrayed, our bodily features are also neglected. In the halls of our ancestors it was otherwise, portraits were the objects displayed to be looked at, not statues by foreign artists, nor bronzes nor marbles, but wax models of faces were set out each on a separate side-board, to furnish likenesses to be carried in procession at a funeral in the clan, and always when some member of it passed away the entire company of his house that had ever existed was present. The pedigrees too were traced in a spread of lines running near the several painted portraits. The archive-rooms^b were kept filled with books of records and with written memorials of official careers. Outside the houses and round the doorways there were other presentations of those mighty spirits, with spoils taken from the enemy fastened to them, which even one who bought the house was not permitted to unfasten, and the mansions eternally celebrated a triumph even though they changed their masters. This acted as a mighty incentive, when every day the very walls reproached an unwelcome owner with intruding on the triumphs of another! There is extant an indignant speech by the pleader Messala protesting against the insertion among the likenesses of his family of a bust not belonging to them but to the family of the Laevini^c. A similar reason extracted from old Messala the volumes he composed ‘On Families, because when passing through the hall of Scipio Pomponianus he had observed the Salvittones^d—that was their

^d Probably, like the Scipios, a branch of the Gens Cornelia

men—Africanorum dedecori inepentes Scipionum
nomini sed—pace Messalarum divisse liceat—
etiam mentiri clariorum imagines erat aliquis vi-
tutum amor multoque honestius quam mereri, ne
quis suas expeteret

- 9 Non est praetereundum et novicium inventum,
siquidem non ¹ ex auro argentove, at ² certe ex aere
in bibliothecis dicantur illis, quorum immortales
animae in locis iisdem loquuntur, quin immo etiam
quae non sunt finguntur, pariuntque desideria non
10 traditos vultus, sicut in Homero evenit ³ utique ⁴
maius, ut equidem arbitror, nullum est felicitatis
specimen quam semper omnes scire cupere, qualis
fuerit aliquis Asini Pollionis hoc Romae inventum,
qui primus bibliothecam dicando ingenia hominum
rem publicam fecit an priores coeperint Alex-
andreae et Pergami reges, qui bibliothecas magno
11 certamine instituere, non facile dixerim imaginum
amorem ⁵ flagiasse quondam ⁶ testes sunt Atticus
ille Ciceronis edito de his volumine, M Varro benig-
nissimo invento insertis voluminum suorum fecundi-

¹ nunc *Ian*, *Urlichs* icones *Detlefsen* non solum *edd* *vett*

² at *Mayhoff* aut

³ devenit *B* id evenit *Ian*

⁴ utique *coni* *Mayhoff* quo

⁵ amorem *B* amore *rell*

⁶ (amore) quosdam *coni* *Brotier*

^a Scipio Africanus, victor over Hannibal in 202 B C, and
Scipio Aemilianus Africanus, who destroyed Carthage in
146 B C

former surname—in consequence of an act of adoption by will creeping into others' preserves, to the discredit of the Scipios called Africanus^a But the Messala family must excuse me if I say that even to lay a false claim to the portraits of famous men showed some love for their virtues, and was much more honourable than to entail by one's conduct that nobody should seek to obtain one's own portraits¹

We must not pass over a novelty that has also been invented, in that likenesses made, if not of gold or silver, yet at all events of bronze are set up in the libraries in honour of those whose immortal spirits speak to us in the same places, nay more, even imaginary likenesses are modelled and our affection gives birth to countenances that have not been handed down to us, as occurs in the case of Homer At any rate in my view at all events there is no greater kind of happiness than that all people for all time should desire to know what kind of a man a person was At Rome this practice originated with Asinius Pollio, who first by founding a library made works of genius the property of the public Whether this practice began earlier, with the Kings of Alexandria and of Pergamum,^b between whom there had been such a keen competition in founding libraries, I cannot readily say The existence of a strong passion for portraits in former days is evidenced by Atticus the friend of Cicero in the volume he published on the subject and by the most benevolent invention of Marcus Varro, who actually by some means inserted in a prolific output of

^a Ptolemy I of Egypt (died 283 B.C.) and Attalus I of Pergamum (241–197 B.C.) both founded libraries Two at Alexandria became famous under Ptolemies II and III

tati etiam¹ septingentorum inlustrium aliquo modo imaginibus, non passus⁶ intercidere figuras aut vetustatem aevi contra homines valere, inventi muneris etiam dis invidiosi, quando immortalitatem non solum dedit, verum etiam in omnes terras misit, ut praesentes esse ubique ceu² di possent et hoc quidem alienis ille praestitit

- 12 III Verum clupeos in sacro vel publico dicare privatim primus instituit, ut reperio, Appius Claudius qui consul cum P Servilio fuit anno urbis cclviii posuit enim in Bellonae aede maiores suos, placuitque in excelso spectari et³ titulos honorum legi, decora res, utique si liberum turba parvulis imaginibus ceu nidum aliquem subolis pariter ostendat, quales clupeos nemo non gaudens favensque aspicit
- 13 IV post eum M Aemilius collega in consulatu Quinti Lutati non in basilica modo Aemilia, verum et domi suae posuit, id quoque Martio exemplo scutis enim, qualibus apud Troiam pugnatum est, continebantur imagines, unde et nomen habuere clupeorum, non, ut perversa grammaticorum supilitas voluit, a cluendo origo plena virtutis,

¹ fecunditati etiam *Mayhoff* f hominum *Detlefsen* fecunditatum *B¹*, *cd Leid Voss*, *cd Flor Ricc* fecunditati *B²* fecunditatum non nominibus tantum *cd Par Lat* 6797

² ceu di *M Hertz*, *Urlichs* cludi

³ et *con Warmington* in (*recte*?)

^a *Eg* the shield of Achilles, *Iliad* XVIII, 478 ff, and the shield of Aeneas, *Aeneid* VIII, 625 ff

volumes portraits of seven hundred famous people, not allowing their likenesses to disappear on the lapse of ages to prevail against immortality in men. Herein Varro was the inventor of a benefit that even the gods might envy, since he not only bestowed immortality but despatched it all over the world, enabling his subjects to be ubiquitous, like the gods. This was a service Varro rendered to strangers.

III But the first person to institute the custom of privately dedicating the shields with portraits in a temple or public place, I find, was Appius Claudius, the consul with Publius Servilius in the 259th year of the city. He set up his ancestors in the shrine of the Goddess of War, and desired them to be in full view on an elevated spot, and the inscriptions stating their honours to be read. This is a seemly device, especially if miniature likenesses of a swarm of children at the sides display a sort of brood of nestlings, shields of this description everybody views with pleasure and approval. IV After him Marcus Aemilius, Quintus Lutatius's colleague in the consulship, set up portrait-shields not only in the Basilica Aemilia but also in his own home, and in doing this he was following a truly warlike example, for the shields which contained the likenesses resembled those^a employed in the fighting at Troy, and this indeed gave them their name of *clupeæ*,^b which is not derived from the word meaning 'to be celebrated,' as the misguided ingenuity of scholars has made out. It is a copious inspiration of valour for there to be a representation on a shield of the

^b Pliny means that *clupeus* is derived from γλύφω, to carve or emboss, not from the old Latin *cluo* or *clueo*, to be reputed famous.

- faciem reddi in scuto eius¹ qui fuerit usus illo
 14 Poeni ex auro factitaveré et clupeos et imagines
 secumque vexere in castris² certe captis talem
 Hasdrubalis invenit Marcius, Scipionum in Hispania
 ultor, isque clupeus supia fores Capitoline aedis
 usque ad incendium primum fuit maiorum quidem
 nostrorum tanta securitas in ea re adnotatus, ut
 L Manlio Q Fulvio cos anno uiribus DLXXV M
 Aufidius tutelae Capitoli³ redemptor docuerit
 patres argenteos esse clupeos, qui pro aereis⁴ per
 aliquot iam lustria adsignabantur
 15 V De picturae mitis incerta nec instituti operis
 quaestio est Aegypti sex milibus annorum apud
 ipsos inventam, priusquam in Graeciam transiret,
 adfirmant, vana praedicatione, ut palam est, Graeci
 autem alii Sicyone, alii apud Corinthios repertam,
 omnes umbra hominis lineis circumducta, itaque
 primam talem, secundam singulis coloribus et
 monochromaton⁵ dictam, postquam operosior in-
 16 venta erat, duratque talis etiam nunc inventam
 liniarem a Philocle Aegypto vel Cleanthe Corinthio

¹ eius *Detlefsen* eiusque *B*² cuiusque

² vexere in castris *Mayhoff* in castris vexere *B* 1 c
 tulere *cd Par* 6801 1 c veneré *rell*

³ Capitolio *B* capitolii *cd Leid* 1 oss

⁴ aureis *Detlefsen*

⁵ e monochromato *B* et monochromaton *rell*

^a Publius and Gnaeus Scipio were destroyed in Spain by the Carthaginians, 212-211 B C L Marcus and T Fonteus prevented further disasters

^b A conjectural alteration gives 'gold'

countenance of him who once used it The Carthaginians habitually made both shields and statues of gold, and carried these with them at all events Marcius, who took vengeance for the Scipios in Spain,^a found a shield of this kind that belonged to Hasdrubal, in that general's camp when he captured it, and this shield was hung above the portals of the temple on the Capitol till the first fire Indeed it is ^{83 B C} noticed that our ancestors felt so little anxiety about this matter that in the 575th year of the city, ^{179 B C} when the consuls were Lucius Manlius and Quintus Fulvius, the person who contracted for the safety of the Capitol, Marcus Aufidius, informed the Senate that the shields which for a good many censorship periods past had been scheduled as made of bronze ^b were really silver

V The question as to the origin of the art of ^{Origins of painting} painting is uncertain ^c and it does not belong to the plan of this work The Egyptians declare that it was invented among themselves six thousand years ago before it passed over into Greece—which is clearly an idle assertion As to the Greeks, some of them say it was discovered at Sicyon, others in Corinth, but all agree that it began with tracing an outline round a man's shadow ^d and consequently that pictures were originally done in this way, but the second stage when a more elaborate method had been invented was done in a single colour and called monochrome,^e a method still in use at the present day Line-drawing was invented by the Egyptian Philocles or by the Corinthian Cleanthes,

^c Cf VII 205 A Rumpf, *Journ of Hellenic St* LXVII, 10 ff

^d But study of extant ancient art refutes this idea

^e See §§ 29, 56

pumi evercuere Aridices¹ Corinthius et Telephanes Sicyonius, sine ullo etiamnum hi colore, iam tamen spargentes linias intus ideo et quos pinxere² adscribere institutum primus inlevit³ eas colore⁴ testae, ut ferunt, tritae⁵ Ecphantus⁶ Corinthius hunc eodem nomine alium⁷ fuisse quam⁸ tradit Cornelius Nepos secutum in Italiam Damaratum, Tairquinum Prisci regis Romani patrem, fugientem a Corintho tyranni iniurias Cypseli, mox docebimus

- 17 VI Iam enim absoluta erat pictura etiam in Italia exstant certe hodieque antiquiores urbe picturae Ardeae in aedibus sacris, quibus equidem nullas aequae minor, tam longo aevo durantes⁹ in oribitate tecti veluti recentes⁹ similiter Lanuvi, ubi Atalante et Helena comminus pictae sunt nudaе ab eodem artifice, utraque excellentissima forma, sed altera ut virgo, ne ruinis quidem templi
- 18 concussae Gaius princeps tollere eas conatus est libidine accensus, si tectorum natura permisisset durant et Caere antiquiores et ipsae, fatebiturque quisquis eas diligenter aestimaverit nullam artium celerius consummatam, cum Iliacis temporibus non fuisse eam appareat

¹ Aridices *Sillig*, *Keil* aradices *B* ardices *rell*

- pinxere *Mayhoff* pingerent *edd vett* pingere

³ inlevit *Urlichs* invenit

⁴ colore *B* colores *rell* colorare *Gelen* colorare colore

Ian

⁵ tritae *Sillig* triste *B*¹ triste *B*² ita aut it *rell*

⁶ Ecphantus *Sillig*, *O Jahn* ephantus *B* elephantus *rell*

⁷ eundem nomine alio *Schultz*

⁸ *Vl* quem quam quem *Sillig*, *Ian*

⁹ *Vl* durantis recentis durantibus recentibus

com Sillig

but it was first practised by the Corinthian Aridices and the Sicyonian Telephanes—these were at that stage not using any colour, yet already adding lines here and there to the interior of the outlines, hence it became then custom to write on the pictures the names of the persons represented. Ecphantus of Corinth is said to have been the first to daub these drawings with a pigment made of powdered earthenware. We shall show below that this was another person, bearing the same name, not the one recorded by Cornelius Nepos to have followed into Italy Demaratus the father of the Roman king Tarquinius Priscus when he fled from Corinth to escape the violence of the tyrant Cypselus. § 152

VI For the art of painting had already been brought to perfection even in Italy. At all events there survive even to-day in the temples at Atræa paintings that are older than the city of Rome, which to me at all events are incomparably remarkable, surviving for so long a period as though freshly painted, although unprotected by a roof. Similarly at Lanuvium, where there are an Atalanta and a Helena close together, nude figures, painted by the same artist, each of outstanding beauty (the former shown as a virgin), and not damaged even by the collapse of the temple. The Emperor Caligula from lustful motives attempted to remove them, but the consistency of the plaster would not allow this to be done. There are pictures surviving at Caere that are even older. And whoever carefully judges these works will admit that none of the arts reached full perfection more quickly, inasmuch as it is clear that painting did not exist in the Trojan period. *Early Italian painting*
trad 616
578 B C

- 19 VII Apud Romanos quoque honos mature huic
 arti contigit, siquidem cognomina ex ea Pictorum
 traxerunt Tabi clarissimae gentis, princepsque eius
 cognominis ipse aedem Salutis pinxit anno urbis
 conditae ccccl quae pictura duravit ad nostiam
 memoriam rede ea Claudii principatu exusta
 proxime celebrata est in foro boario aede Herculis
 Pacui poetae pictura Enni sorore genitus hic fuit
 clarioremque autem eam Romae fecit gloria scaenae
 20 postea non est spectata honestis manibus, nisi forte
 quis Tuipilius equitem Romanum ex Venetia nostiae
 aetatis velit referre, pulchris eius operibus hodieque
 Veronae exstantibus laeva is manu pinxit, quod
 de nullo ante memoratum parvis¹ gloriabatur
 tabellis extinctus nuper in longa senecta Titedius²
 Labeo praetorius, etiam proconsulatu provinciae
 Narbonensis functus, sed ea re inrisa³ etiam con-
 21 tumeliae erat fuit et principum virorum non
 omittendum de pictura celeberrimo consilium, cum
 Q Pedius, nepos Q Pedii consularis triumphalisque
 et a Caesare dictatore coheredis Augusto dati,
 natura mutus esset in eo Messala orator, ex
 cuius familia pueri avia fuerat, picturam docendum

¹ paruisse B parvis ipse con Mayhoff

² Titedius B sit edius rell Titidius Sillig Antistius
 Hardouin Aterius edd vett

³ inrisa Mayhoff inlisa B in risu rell (irrisu cd Par I at
 6797)

^a Roman writer of tragedies, c 220-c 130 B C

^b Famous Roman epic and dramatic poet 239-169 B C

VII In Rome also honour was fully attained by this art at an early date inasmuch as a very distinguished clan of the Fabii derived from it their surname of Pictor, 'Painter,' and the first holder of the name himself painted the Temple of Health in the year 450 from the foundation of the City the work survived down to our own period, when the temple was destroyed by fire in the principate of Claudius. Next in celebrity was a painting by the poet Pacuvius ^a in the temple of Hercules in the Cattle Market. Pacuvius was the son of a sister of Ennius,^b and he added distinction to the art of painting at Rome by reason of his fame as a playwright. After Pacuvius, painting was not esteemed as handiwork for persons of station, unless one chooses to recall a knight of Rome named Turpilus, from Venetia, in our own generation, because of his beautiful works still surviving at Verona. Turpilus painted with his left hand, a thing recorded of no preceding artist. Titedius Labeo, a man of praetorian rank who had actually held the office of Proconsul of the Province of Narbonne, and who died lately in extreme old age, used to be proud of his miniatures, but this was laughed at and actually damaged his reputation. There was also a celebrated debate on the subject of painting held between some men of eminence which must not be omitted, when the former consul and winner of a triumph Quintus Pedius, who was appointed by the Dictator Caesar as his joint heir with Augustus, had a grandson Quintus Pedius who was born dumb, in this debate the orator Messala, of whose family the boy's grandmother had been a member, gave the advice that the boy should have lessons in painting, and

*Early
Roman
painting
and painters*

301 B.C.

49-41 B.C.

- censuit, idque etiam divus Augustus comprobavit,
 22 puer magni profectus in ea arte obit dignatio
 autem praecipua Romae increvit, ut existimo, a
 M' Valerio Maximo Messala, qui princeps tabulam
 [picturam]¹ proeli, quo Carthaginenses et Hieronem
 in Sicilia vicerat, proposuit in latere curiae Hostiliae
 anno ab urbe condita cccxc fecit hoc idem et
 L Scipio tabulamque victoriae suae Asiaticae in
 Capitolio posuit, idque aegre tulisse, fratrem Afri-
 canum tradunt, haut inmerito, quando filius eius
 23 illo proelio captus fuerat non dissimilem offensio-
 nem et Aemilianum subit L Hostilius² Mancinus,
 qui primus Carthaginem inuiperat, situm eius
 oppugnationesque depictas proponendo in foro et
 ipse adsistens populo spectanti singula enarrando,
 qua comitate proximis comitis consulatum adeptus
 est habuit et scaena ludis Claudii Pulchri magnam
 admirationem picturae, cum ad tegularum simil-
 tudinem corvi decepti imagine³ advolarent
 24 VIII Tabulis autem externis auctoritatem
 Romae publice fecit primus omnium L Mummius,
 cui cognomen Achiaci victoria dedit namque cum
 in praeda vendenda rex Attalus⁴ X[VI]⁵ emisset
 tabulam Aristidis, Libeum patrem, pietum miratus

¹ *Mayhoff* picturā B pictam *rell*
 hostili'm S B hostilius M f *con* Ian

² I l imaginem imagini Ian

⁴ rex attalus distraxisset et *cd* Par 6801

⁵ X[VI] *Dettefsen* \ VI *Hardouin* XVI aut XIII *edd*

^a Over Antiochus III in 190 B C

^b Mancinus commanded the Roman fleet in the Third Punic War when Carthage was taken and destroyed by Scipio Aemilianus in 146 B C

^c Over the Greeks in 146 B C when Mummius destroyed Corinth

his late lamented Majesty Augustus also approved of the plan. The child made great progress in the art, but died before he grew up. But painting chiefly derived its rise to esteem at Rome, in my judgement, from Manius Valerius Maximus Messala, who in the year 490 after the foundation of the city first showed a picture in public on a side wall of the Curia Hostilia the subject being the battle in Sicily in which he had defeated the Carthaginians and Hiero. The same thing was also done by Lucius Scipio, who put up in the Capitol a picture of his Asiatic victory^a this is said to have annoyed his brother Africanus, not without reason, as his son had been taken prisoner in that battle. Also Lucius Hostilius Mancinus^b who had been the first to force an entrance into Carthage incurred a very similar offence with Aemilianus by displaying in the forum a picture of the plan of the city and of the attacks upon it and by himself standing by it and describing to the public looking on the details of the siege, a piece of popularity-hunting which won him the consulship at the next election. Also the stage erected for the shows given by Claudius Pulcher won great admiration for its painting, as crows were seen trying to alight on the roof tiles represented on the scenery, quite taken in by its realism.

VIII The high esteem attached officially to foreign paintings at Rome originated from Lucius Mummius who from his victory^c received the surname of Achaicus. At the sale of booty captured King Attalus^d bought for 600,000 denarii a picture of Father Liber or Dionysus by Aristides, but the

*Foreign
paintings
Rome*

*L Mum
mius*

^d Attalus II of Pergamum, 159-138 B C

- suspiciatusque aliquid in ea virtutis, quod ipse nesciet, revocavit tabulam, Attalo multum querente, et in Cereis delubio posuit, quam primam arbitror picturam externam Romae publicatam
- 25 deinde video et in foro positas volgo hinc enim ille Crassi oratoris lepos agentis sub Veteribus, cum testis compellatus instaret dic eigo, Ciasse, qualem me noris? talem, inquit, ostendens in tabula inficetissime Gallum everentem linguam in foro fuit et illa pastoris senis cum baculo, de qua Teutonorum legatus respondit interrogatus, quantine¹ eum aestimaret, donari sibi nolle talem vivum verumque
- 26 IX Sed praecipuam auctoritatem publice tabulis fecit Caesar dictator Aiace et Media ante Veneris Genetricis aedem dicatis, post eum M Agrippa, vir iustitiae propior quam delicias exstat certe eius oratio magnifica et maximo civium digna de tabulis omnibus signisque publicandis, quod fieri satius fuisset quam in villarum exilia pelli verum eadem illa torvitas tabulas duas Aiace et Veneris mercata est a Cyzicenis HS² [XII],³ in thermarum quoque

¹ quanti *cd* Par 6801

² HS *Gelen* h *TTTT* B¹ hīs B^o om *rell*

³ [XII] *Ian* *ahn ala* XII B XIII *rell*

^a With regard to this story (1) there was no auction of pictures, Mummius took to Rome the most valuable and handed over the rest to Philopoemen (2) Attalus was not present at Corinth (where this scene occurred) When the Roman soldiers were using the pictures as dice boards, Philopoemen offered M 100 talents if he should assign Aristides' picture to Attalus' share (Paus VII, 16, 1, 8, Strabo VIII, 4 23 = 381)

price surprised Mummius, who suspecting there must be some merit in the picture of which he was himself unaware had the picture called back, in spite of Attalus's strong protests, and placed it in the Shrine of Ceres the first instance, I believe, of a foreign picture becoming state-property at Rome.^a After this I see that they were commonly placed even in the forum to this is due the famous witticism of the pleader Crassus, when appearing in a case Below The Old Shops, a witness called kept asking him 'Now tell me, Crassus, what sort of a person do you take me to be?' 'That sort of a person,' said Crassus, pointing to a picture of a Gaul putting out his tongue^b in a very unbecoming fashion. It was also in the forum that there was the picture of the Old Shepherd with his Staff, about which the Teuton envoy when asked what he thought was the value of it said that he would rather not have even the living original as a gift!

IX But it was the Dictator Caesar who gave *Caesar* outstanding public importance to pictures by dedicating paintings of Ajax and Medea in front of the 46 B C temple of Venus Genetrix, and after him Marcus 63-12 B C Agrippa, a man who stood nearer to rustic simplicity than to refinements. At all events there is preserved a speech of Agrippa, lofty in tone and worthy of the greatest of the citizens, on the question of making all pictures and statues national property, a procedure which would have been preferable to banishing them to country houses. However, that same severe spirit paid the city of Cyzicus 1,200,000 sesterces for two pictures, an Ajax and an Aphrodite, he had also had small paintings let into the marble

^b Not apparently as in insult but as an averting act

calidissima parte marmoribus incluserat parvas tabellas, paulo ante, cum reficerentur, sublatas

27 X Super omnes divus Augustus in foro suo celeberrima in parte posuit tabulas duas, quae Belli faciem pictam habent et Triumphum, item Castores ac Victoriā posuit et quas dicemus sub artificum mentione in templo Caesaris patris idem in curia quoque, quam in comitio consecrabat, duas tabulas inpressit parieti Nemean sedentem rupia leonem, palmigeriam ipsam, adstante¹ cum baculo sene, cuius supra caput tabella bigae dependet, Nicias scripsit² se inussisse, tali enim usus est verbo

28 alterius tabulae admutatio est puberem filium seni patri similem esse aetatis salva differentia, superivolante aquila draconem complexa Philochares hoc suum opus esse testatus est, immensa, vel unam si tantum hanc tabulam aliquis aestimet, potentia artis, cum propter Philocharen ignobilissimos alioqui Glaucionem filiumque eius Aristippum senatus populi Romani tot saeculis spectet¹ posuit et Tiberius Caesar, minime comis imperator, in templo ipsius Augusti quas mox indicabimus hactenus dictum sit de dignitate artis morientis

29 XI Quibus coloribus singulis primum pinxissent diximus, cum de his pigmentis traderemus in metallis,

¹ adstante *edd rett* adstantem

- asscripsit *con Mayhoff*

^a Castor and Pollux (Polydeuces)

^b Julius Caesar who had adopted Augustus

^c The Nemean forest (personified) where Heracles killed the Nemean lion

^d See pp 356-9

even in the warmest part of his Hot Baths, which were removed a short time ago when the Baths were being repaired

X His late lamented Majesty Augustus went beyond all others, in placing two pictures in the most frequented part of his forum, one with a likeness of War and Triumph, and one with the Castors^a and Victory. He also erected in the Temple of his father Caesar^b pictures we shall specify in giving the names of artists § 91. He likewise let into a wall in the curia which he was dedicating in the comitium a Nemea^c seated on a lion, holding a palm-branch in her hand, and standing at her side an old man leaning on a stick and with a picture of a two-horse chariot hung up over his head, on which there was an inscription saying that it was an 'encaustic' design—such is the term which he employed—by Nicias^d. The second picture is remarkable for displaying the close family likeness between a son in the prime of life and an elderly father, allowing for the difference of age above them soars an eagle with a snake in its claws, Philochares has stated this work to be by him showing the immeasurable power exercised by art if one merely considers this picture alone, inasmuch as thanks to Philochares two otherwise quite obscure persons Glaucio and his son Aristippus after all these centuries have passed still stand in the view of the senate of the Roman nation! The most ungracious emperor Tiberius also placed pictures in the temple of Augustus himself which we shall soon mention § 131. Thus much for the dignity of this now expiring art

XI We stated what were the various single colours used by the first painters when we were discussing while on the subject of metals the pig-

*Augustus
and
Tiberius*

§ 91

29 B C

A D 14-37

§ 131

*Painters'
colours
XXXIII,*
117

quae¹ monochromata a² genere³ picturae vocantur⁴ qui deinde et quae invenerint et quibus temporibus, dicemus in mentione artificum, quoniam indicare naturas colorum prior causa operis instituta est tandem se ars ipsa distinxit et invenit lumen atque umbras, differentia colorum alterna vice sese excitante postea deinde adiectus est splendor, alius hic quam lumen quod inter haec et umbras esset, appellaverunt tonon, commissuras vero colorum et transitus harmogen

30 XII Sunt autem colores austeri aut flouidi utrumque natura aut mixtura evenit flouidi sunt —quos dominus pingenti⁵ praestat—minium, Armenium, cinnabaris, chrysocolia, Indicum, purpurissimum, ceteri austeri ex omnibus aliis nascuntur, alii fiunt nascuntur Sinopis, iurica, Paracetonum, Melinum, Eretria, auripigmentum, ceteri finguntur, primumque quos in metallis diximus, praeterea e vilioribus ochra, cerussa usta, sandaraca, sandyx, Syriacum atramentum

¹ quae *Sillig* qui *add* *del* *Littre*

² monochromata a *Mayhoff* in *ex* *Littre* monochromateia *cd* *Par* 6801 *ut* *videtur* mox negrammatae a *B* mox neo grammateia *rell*

³ genere *Mayhoff* genera

⁴ vocantur *B* vocaverunt *rell*

⁵ pingenti *ed* *Basil* fingenti

^a Study of ancient art does *not* show that painting started with the use of single colours

^b The Greek term ἀρμυγή means adjustment of parts

^c *Minium* See § 33 (note) and XXXIII, 111–123

^d A rich blue colour (from Armenia), the modern iazurite
See also § 47

^e *Cinnabaris* here in Pliny See XXXIII, 115–116

^f Our 'malachite'

^g Earth stained with Tyrian purple

ments called monochromes from the class of painting for which they are used. Subsequent^a inventions and then authors and dates we shall specify in enumerating the artists, because a prior motive for the work now in hand is to indicate the nature of colours. Eventually art differentiated itself, and discovered light and shade, contrast of colours heightening then effect reciprocally. Then came the final adjunct of shine, quite a different thing from light. The opposition between shine and light on the one hand and shade on the other was called contrast, while the juxtaposition of colours and then passage one into another was termed attunement.^b

XII Some colours are sombre and some brilliant, the difference being due to the nature of the substances or to their mixture. The brilliant colours, which the patron supplies at his own expense to the painter, are cinnabar,^c Armenium,^d dragon's blood,^e gold-solder,^f indigo, bright purple^g, the rest are sombre. Of the whole list some are natural colours and some artificial. Natural colours are sinapis,^h ruddle, Paraetionum,ⁱ Melinum,^j Eretian earth^k and opiment, all the rest are artificial, and first of all those which we specified among minerals, and moreover among the commoner kinds yellow ochre, burnt lead acetate, realgar, sandy x,^l Syrian colour^m and black.ⁿ

^h A brown red ochre or red oxide of iron from Sinope

ⁱ From a white chalk or calcium carbonate, and perhaps also steatite, of Paraetionum in N Africa, see note ^a on § 36

^j A white marl from Melos

^k From Eretria in Euboea, perhaps magnesite

^l Mixed oxide of lead and oxide of iron

^m See § 40

ⁿ See XXXIV, 112, 123

- 31 XIII Sinopis inventa primum in Ponto est, inde nomen a Sinope urbe nascitur et in Aegypto, Baliaribus, Africa, sed optima in Lemno et in Cappadocia, effossa e speluncis pais, quae saxi adhaesit, excellit glaebis suis colos, extra maculosus hac usi sunt veteres ad splendorem species Sinopidis tres rubra et minus iubens atque inter has media pretium optimae X ii, usus ad penicillum aut si
- 32 lignum colorare libeat, eius, quae ex Africa venit, octoni asses—cicerculum appellant, magis ceteris iubet, utilior abacis idem pretium et eius, quae pressior vocatur, et est maxime fusca usus ad bases abacorum, in medicina vero blandus < pas-tillis >¹ emplastrisque et malagmatis, sive sicca compositione sive liquida facilis, contra ulcera in umore sita, velut onis, sedis alvum sistit infusa, feminarum profluvia pota denarii pondere eadem adusta siccant scabritias oculorum, e vino maxime
- 33 XIV Rubicae genus in ea volvere intellegi quidam secundae auctoritatis, palmam enim Lemniae dabant minio proxima haec est, multum antiquis celebrata cum insula, in qua nascitur nec nisi signata venundabatur, unde et sphragidem appel-

¹ *Mayhoff*

^a See note ^b, p 283

^b Dark brownish

^c This generally is the proper meaning of *minium* except when it is called *min secundarium* = red lead See XXXIII, 111-123

XIII Sinopis ^a was first discovered in Pontus, *Ochre of Sinope* and hence takes its name from the city of Sinope. It is also produced in Egypt, the Balearic Islands and Africa, but the best is what is extracted from the caverns of Lemnos and Cappadocia, the part found adhering to the rock being rated highest. The lumps of it are self-coloured, but speckled on the outside. It was employed in old times to give a glow. There are three kinds of Sinopis, the red, the faintly red and the intermediate. The price of the best is 2 denarii a pound; this is used for painting with a brush or else for colouring wood, the kind imported from Africa costs 8 as-pieces a pound, and is called chickpea colour ^b, it is of a deeper red than the other kinds, and more useful for panels. The same price is charged for the kind called 'low toned' which is of a very dusky colour. It is employed for the lower parts of panelling, but used as a drug it has a soothing effect in (lozenges and) plasters and poultices, mixing easily either dry or moistened, as a remedy for ulcers in the humid parts of the body such as the mouth and the anus. Used in an enema it arrests diarrhoea, and taken through the mouth in doses of one denarius weight it checks menstruation. Applied in a burnt state, particularly with wine, it cures roughnesses of the eyes.

XIV Some persons have wished to make out that Sinopis only consists in a kind of red-ochre of inferior quality, as they gave the palm to the red ochre of Lemnos. This last approximates very closely to cinabar, ^c and it was very famous in old days, together with the island that produces it, it used only to be sold in sealed packages, from which it got the name of 'seal red-ochre'. It is used to

34 lareie hac minum sublinunt adulterantque in medicina praeclara res habetur epiphoras enim oculorum mitigat ac dolores circumlita et aeglopia manare prohibet, sanguinem reicientibus ex aceto datui bibenda bibitui et contra lienum reniumque vitia et purgationes feminarum, item et contra venena et serpentium ictus terrestrium marinorumque, omnibus ideo antidotis familiaris

35 XV E reliquis rubicae generibus, fabius utilissima Aegyptia et Africana, quoniam maxime sobentui tectoris¹ rubrica² autem nascitur et in ferriis metallis XVI Ea et fit ochra³ exusta in ollis novis luto circumlitis quo magis arsit in caminis, hoc melior omnis autem rubrica siccatur ideoque ex⁴ emplastris conveniet⁵ igni etiam sacio

36 XVII Sinopidis Ponticae selbiae silis lucidi libris et Melni Graecensis in mixtis tinctisque una per dies duodenos⁶ leucophorum fit hoc est glutinum auri, cum inducitur ligno

XVIII Paraetonium loci nomen habet ex Aegypto spumam maris esse dicunt solidatam cum limo, et ideo conchae minutae inveniuntur in eo fit et in Creta insula atque Cyrenis adulteratur Romae creta Cimolia decocta conspissataque pretium optimo in pondo vi X L e candidis coloribus

¹ tectoris *Mayhoff* picturis

² rubrica *hic Mayhoff* *infra post* exusta

³ ea et fit ochra *Mayhoff* ex ea fit ochra *aut* ochra ex ea fit

⁴ ex *aut* et *add* (*om B*)

⁵ conveniet *vel* conveniat *Mayhoff* convenit et

⁶ duodenos *Mayhoff* duodenis *B* *et* *rell*

^a Marsa Labert in N Africa, between Egypt and the Syrtes
Cf n on § 30

^b Cf XXXV, 195 ff

supply an undercoating to cinnabar and also for adulterating cinnabar. In medicine it is a substance ranked very highly. Used as a liniment round the eyes it relieves defluxions and pains, and checks the discharge from eye-tumours, it is given in vinegar as a draught in cases of vomiting or spitting blood. It is also taken as a draught for troubles of the spleen and kidneys and for excessive menstruation, and likewise as a remedy for poisons and snake bites and the sting of sea serpents, hence it is in common use for all antidotes.

XV Among the remaining kinds of red ochre the most useful for builders are the Egyptian and the African varieties, as they are most thoroughly absorbed by plaster. Red ochre is also found in a native state in iron mines. XVI It is also manufactured by burning ochre in new earthen pots lined with clay. The more completely it is calcined in the furnaces the better its quality. All kinds of red ochre have a drying property, and consequently will be found suitable in plasters even for erysipelas.

XVII Half a pound of sinapis from Pontus, ten pounds of bright yellow ochre and two pounds of Greek earth of Melos mixed together and pounded up for twelve successive days make 'leucophorum,' a cement used in applying gold-leaf to wood.

XVIII Paraetonium is called after the place ^a of that name in Egypt. It is said to be sea-foam hardened with mud, and this is why tiny shells are found in it. It also occurs in the island of Ciete and in Cyrene. At Rome it is adulterated with Cimolian clay ^b which has been boiled and thickened. The price of the best quality is 50 denarii per 6 lbs. It is the most greasy of all the white colours and makes

*Other
ochres*

*Cf XXXI
64.*

*White pig-
ments*

pinguissimum et tectorius¹ tenacissimum propter levorem

- 37 XIX Melinum candidum et ipsum est, optimum in Melo insula in Samo quoque² nascitur, eo non utuntur pictores propter nimiam pinguitudinem, accubantes effodiunt ibi inter saxa venam scrutantes in medicina eundem usum habet quem Eretria creta, praeterea linguam tactu siccatur, pilos detrahit smectica vi³ pretium in libras sestertii singuli

Tertius e candidis colos est cerussa, cuius rationem in plumbi metallis diximus fuit et terra per se in Theodoti fundo inventa Zmyrnae, qua veteres ad navium picturas utebantur nunc omnis ex plumbo et aceto fit, ut diximus

- 38 XX Usta casu reperta est in incendio Piraei⁴ cerussa in urceis⁵ cremata hac primum usus est Nicias supra dictus optima nunc Asiatica habetur, quae et purpurea appellatur pretium eius in libris X vi fit et Romae cremato sile marmoroso et restincto aceto sine usta non fiunt umbrae

XXI Eretria terrae suae habet nomen hac Nicomachus et Parrhasius uti refrigerat, emollit explet volnera, si coquatur, ad siccanda praecipitur, utilis⁶ et capitis doloribus et ad deprehendenda

¹ tectorius *edd vet* tectorii *Mayhoff* (*recte?*) tectori *edd*

² quod *Mayhoff*

³ smectica vi *Urlichs* metica ut *ed Flor Ricc* metica ut *ed Leid Voss*, *ed Par Lat* 6797 metica ut *B*

⁴ Piraei *Gelen* pyrae *edd vet* pira et

⁵ urceis *B²* urcis *B¹* orcis *vell* hortis *edd vet*

⁶ praecipitur, utilis *Mayhoff* praecoquitur utilis *B* utilis praecipua *vell*

^a See note ^j on § 30

^b Perhaps lead carbonate, cerussite From Vitruv VII, 7, 4 we learn that it was green, perhaps because tinted with copper salts

the most tenacious for plasters because of its smoothness

XIX Melinum^a also is a white colour, the best occurring in the island of Melos. It is found in Samos also, but the Samian is not used by painters because it is excessively greasy. It is dug up in Samos by people lying on the ground and searching for a vein among the rocks. It has the same use in medicine as earth of Eretria, it also dries the tongue by contact, and acts as a depilatory, with a cleansing effect. It costs a sesterce a pound.

The third of the white pigments is ceruse or lead acetate, the nature of which we have stated in XXXIV
175 speaking of the ores of lead. There was also once a native ceruse earth^b found on the estate of Theodotus at Smyrna, which was employed in old days for painting ships. At the present time all ceruse is manufactured from lead and vinegar, as we said.

XX Burnt ceruse was discovered by accident, *Ceruse, etc* when some was burnt up in jars in a fire at Piræus. It was first employed by Nicias above mentioned. Asiatic ceruse is now thought the best, it is also called purple ceruse and it costs 6 denarii per lb. It § 327 is also made at Rome by calcining yellow ochre which is as hard as marble and quenching it with vinegar. Burnt ceruse is indispensable for representing shadows.

XXI Eretrian earth^c is named from the country that produces it. It was employed by Nicomachus and Parrhasius. It has cooling and emollient effects and fills up wounds, if boiled it is prescribed as a desiccative, and is useful for pains in the head and for detecting internal suppurations, as these are

^c See note ^k on § 30

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pura, subesse enim ea intellegunt, si ex aqua inlita continuo ¹ arescat

- 39 XXII Sandaracam et ochram Iuba tradidit in insula Rubi maris Topazo nasci, sed inde non pervehuntur ad nos sandaraca quomodo fieret diximus fit et adulterina ex cerussa in foinace cocta color esse debet flammeus pietum in libias asses quini

- 40 XXIII Haec si toireatur aequa parte iubrica admixta, sandycem facit, quamquam animadverto Vergilium existimasse herbam id esse illo versu

Sponte sua sandyx pascentis vestiet ² agnos

pietum in libias dimidium eius quod sandaracae nec sunt alii colores maioris ponderis

XXIV Inter facticios est et Syricum, quo minium sublimi diximus fit autem Sinopide et sandyce mixtis

- 41 XXV Atiamentum quoque inter facticios erit, quamquam est et teriae,³ geminae originis aut enim salsuginis modo emanat, aut terra ipsa sulphurei coloris ad hoc probatur inventi sunt pictores, qui carbones infestatis⁴ sepulchris effoderent⁵ inportuna haec omnia ac novicia fit enim e fuligine pluribus modis, resina vel pice exustis, propter

¹ inlita continuo *Mayhoff* inlita non *cdd* (inlinunt non *B*)

² vestiet *cd Par* 6801, *item Verg* vestiat *rell*

³ terrae aut terra *cdd* e terra *Madvig*

⁴ infestatis *Mayhoff* qui et infestantes sepulchra *con* infectant aut infectos *cdd* iniectos *con* *Sillig* adfectarent *Detlefsen* (sepulchris carbones infectos *cd Par* 6801)

⁵ effoderent *cd Tolet*, *cd Par* 6801 effodere *B* infoderet *rell* (infoderent *cd Par Lat* 6797)

^a Zeboiget

^b *Virg Ecl* IV, 45 (*vestiet Virg*) There is no proof that Virgil did take sandyx to be a plant

shown to be present if when it is applied with water it immediately dries up

XXII According to Juba sandarach or realgar and ochre are products of the island of Topazus^a in the Red Sea, but they are not imported from those parts to us. We have stated the method of making sandarach. An adulterated sandarach is also made from ceruse boiled in a furnace. It ought to be flame-coloured. Its price is 5 asses per lb. XXIV
177

XXIII If ceruse is mixed with red ochre in equal quantities and burnt, it produces sandyx or vermillion—though it is true that I observe Virgil held the view that sandyx is a plant, from the line

Sandyx self-grown shall clothe the pasturing
lamb^b

Its cost per lb. is half that of sandarach. No other colours weigh heavier than these.

XXIV Among the artificial colours is also Syrian colour, which as we said is used as an undercoating for cinnabar and red lead. It is made by mixing sinopis and sandyx together.

XXV Black pigment will also be classed among the artificial colours, although it^c is also derived from earth in two ways, it either exudes from the earth like the brine in salt pits, or actual earth of a sulphur colour is approved for the purpose. Painters have been known to dig up charred remains from graves thus violated to supply it. All these plans are troublesome and new-fangled, for black paint can be made in a variety of ways from the soot produced by burning resin or pitch, owing to which

^c For this mineral shoemaker's black, see XXXIV, 112, 123. The other blacks which follow are mostly composed of carbon.

- quod etiam officinas aedificavere fumum eum non
emittentes laudatissimū eodem modo fit e taedis
adulteratui foinacium balnearumque fuligine quo
42 ad volumina scribenda utuntur sunt qui et vini
faecem siccata excoquant adfirmentque, si ex
bono vino faex ea¹ fuerit, Indici speciem id atia-
mentum praebere Polygnotus et Micon, cele-
berrimi pictores, Athenis e vinaceis fecere, tyginon
appellantes Apelles commentus est ex ebore
43 combusto facere, quod elephantinum vocatur ad-
portatur et Indicum ex India inexploratae adhuc
inventionis mihi fit etiam apud infectores ex flore
nigro qui adhaerescit aereis cortinis fit et ligno e
taedis combusto tritisque in mortario carbombus
mira in hoc saepiarum natura, sed ex his non fit
omne autem atiammentum sole perficitur, librarium
cumme,² tectorium glutino admixto quod aceto
liquefactum est, aegre eluitur
44 XXVI E reliquis coloribus, quos a dominis dari
diximus propter magnitudinem pretii, ante omnes
est purpurissum creta argentaria cum purpuri
pariter tingitur bibitque eum colorem celerius
lanis praecipuum est primum, fervente aheni

¹ faex ea *Mayhoff* ficta *B* faex *rell* (fex *cd* *Leid* *Voss*)

² cumme *Sillig* gummi *Gelen* comme *cd* (me *B*¹ et *B*²)

^a Probably the real indigo (§ 46) is meant here

^b Some unknown carbon pigment, not the indigo of § 46

^c Or 'this latter variety is wonderfully like the pigment of the cuttle fish, but is never made from these creatures (K C Bailey)

^d Polishing powder of pure ground white earth

factories have actually been built with no exit for the smoke produced by this process. The most esteemed black paint is obtained in the same way from the wood of the pitch-pine. It is adulterated by mixing it with the soot of furnaces and baths, which is used as a material for writing. Some people calcine dried wine-lees, and declare that if the lees from a good wine are used this ink has the appearance of Indian ink.^a The very celebrated painters Polygnotus and Micon at Athens made black paint from the skins of grapes, and called it grape-lees ink. Apelles invented the method of making black from burnt ivory, the Greek name for this is elephantinon. There is also an Indian black,^b imported from India, the composition of which I have not yet discovered. A black is also produced with dyes from the black florescence which adheres to bronze pans. One is also made by burning logs of pitch-pine and pounding the charcoal in a mortar. The cuttle-fish has a remarkable property in forming a black secretion, but no colour is made from this.^c The preparation of all black is completed by exposure to the sun, black for writing ink receiving an admixture of gum and black for painting walls an admixture of glue. Black pigment that has been dissolved in vinegar is difficult to wash out.

XXVI Among the remaining colours which be- *Purples*
cause of their high cost, as we said, are supplied § 30
by patrons, dark purple holds the first place. It is produced by dipping silversmiths' earth^d along with purple cloth and in like manner, the earth absorbing the colour more quickly than the wool. The best is that which being the first formed in the boiling cauldron becomes saturated with the dyes in their

- rudibus medicamentis inebriatum, proximum egesto
 eo addita creta in ius iuem et, quotiens id factum
 est, elevatur bonitas pro numero dilutione sanie
 45 quare Puteolanum potius laudetur quam Tyrium aut
 Gaetulicum vel Laconicum, unde pretiosissimae
 purpurae, causa est quod hysgino¹ maxime inficitur
 rubiaque, quae² cogitur sorbere vilissimum a
 Canusio pretium a singulis denarius in libras
 ad xxx pingentes sandyce sublita, mox ex³ ovo
 inducentes purpurissum, fulgorem minui faciunt si
 purpurae⁴ facere malunt, caeruleum sublinunt,
 mox purpurissum ex ovo inducunt
 46 XXVII Ab hoc maxima auctoritas Indico ex
 India venit harundinum spumae adhaeresciente limo
 cum cernatur, nigrum, at in diluendo mixturam
 purpurae caeruleique mirabilem reddit alterum
 genus eius est in purpurarius officinis innatans cor-
 tinis, et est purpurae spuma qui adulterant, vero
 Indico tingunt stercoia columbina aut cretam
 Selnusiam vel anulariam vitro inficiunt probatur
 carbone, reddit enim quod sincerum est flammam
 excellentis purpurae et, dum fumat, odorem maris
 ob id quidam e scopulis id colligi putant pretium

¹ hysgino *Hermolarius Barbarus* hygino *B* yyg aut yog
 add id genus *cl* *Par* 6801 *iscino Isid*

² rubiaque quae *Ian* rubia quae aut rubiaque

³ ex add *Mayhoff*

⁴ purpurae *Mayhoff* purpura aut purpuram

^a A purplish red colour got from the unidentified plant
 'hygge',

^b From several species of *Indigofera*

primary state, and the next best produced when white earth is added to the same liquor after the first has been removed, and every time this is done the quality deteriorates, the liquid becoming more diluted at each stage. The reason why the dark purple of Pozzuoli is more highly praised than that of Tyre or Gaetulia or Laconia, places which produce the most costly purples, is that it combines most easily with hyssopus^a and madder which cannot help absorbing it. The cheapest comes from Canosa. The price is from one to thirty denarii per lb. Painters using it put a coat of sandyx underneath and then add a coat of dark purple mixed with egg, and so produce the brilliancy of cinnabar, if they wish instead to produce the glow of purple, they lay a coat of blue underneath, and then cover this with dark purple mixed with egg.

XXVII Of next greatest importance after this is *Indigo*^b, a product of India, being a slime that adheres to the scum upon reeds. When it is sifted out it is black, but in dilution it yields a marvellous mixture of purple and blue. There is another kind of it that floats on the surface of the pans^c in the purple dye-shops, and this is the 'scum of purple'. People who adulterate it stain pigeons' droppings with genuine indigo, or else colour earth of Selinus or ring-earth^d with woad. It can be tested by means of a live coal, as if genuine it gives off a brilliant purple flame and a smell of the sea while it smokes, on this account some people think that it is collected from rocks on the coast. The price of indigo is 20 denarii per

^c Perhaps the vessels containing Tyrian purple

^d See § 48. Some white earth, but it is not known whether it came from Selinus in Cilicia or Selinus in Sicily

PLINY NATURAL HISTORY

Indico X xx¹ in libras in medicina Indicum rigores et impetus sedat siccaturque ulcera

- 47 XXVIII Armenia mittit quod eius nomine appellatur lapis est, hic quoque chrysocollae modo infectus, optimumque est quod maxime vicinum et communicato colore cum caeruleo solebant librae eius trecentis² nummis taxari inventa per Hispanias haena est similem curam recipiens, itaque ad denarios senos vilitas rediit distat a caeruleo candore modico, qui teneuiorem hunc efficit colorem usus in medicina ad pilos tantum alendos habet maximeque in palpebris

- 48 XXIX Sunt etiamnum novici duo colores e vilissimis viride est³ quod Appianum⁴ vocatur et chrysocollam mentitur, ceu parum multa ficta⁵ sint mendacia eius, fit e creta viridi, aestimatum sestertius in libras XXX Anulare quod vocant, candidum est, quo muliebres picturae inluminantur, fit et ipsum e creta admixtis vitreis gemmis e viridi anulis, inde et anulare dictum

- 49 XXXI Ex omnibus coloribus cretulam amant udoque inlini recusant purpurissimum, Indicum, caeruleum, Melnum, auripigmentum, Appianum, cerussa cerae tinguntur isdem his coloribus ad eas

¹ X xx B xxx aut xx *rell*

² trecentis B tricenis *rell*

³ viride est *Mayhoff* virides

⁴ fortasse apianum vel apiacum (*item* § 49)

⁵ ficta *coni Mayhoff* dicta

^a Azurite

^b Probably azurite found mixed with green malachite

^c A conjectural emendation *apianum* or *apiacum* gives 'parsley green' It was a clay stained by ferrous substances

pound Used medicinally it allays cramps and fits and dries up sores

XXVIII Armenia sends us the substance ^a *Azurite, etc* named after it Armenian This also is a mineral that is dyed like malachite, and the best is that ^b which most closely approximates to that substance, the colour partaking also of dark blue Its price used to be rated at 300 sesterces per pound A sand has been found all over the Spanish provinces that admits of similar preparation, and accordingly the price has dropped to as low as six denarii It differs from dark blue by a light white glow which renders this blue colour thinner in comparison It is only used in medicine to give nourishment to the hair, and especially the eyelashes

XXIX There are also two colours of a very cheap class that have been recently discovered one is the green called Appian,^c which counterfeits malachite, just as if there were too few spurious varieties of it already¹ It is made from a green earth and is valued at a sesterce per pound XXX The other colour is that called 'ring-white,' which is used to give brilliance of complexion in paintings of women^d This itself also is made from white earth mixed with glass stones from the rings of the lower classes, which accounts for the name 'ring-white'

XXXI Of all the colours those which love a dry surface of white clay, and refuse to be applied to a damp plaster, are purple, indigo, blue, Melian, orpiment, Appian^c and ceruse Wax is stained with these same colours for encaustic paintings, a

^a Or 'which shines on the painted faces of women' (K C Bailey) Cf § 46 and note ^d on p 295

picturas, quae inveniuntur, alieno parietibus genere, sed classibus familiari, iam vero et onerariis navibus, quoniam et vehicula¹ expingimus, ne quis inietui et iogos pingi, iuvatque pugnatorios ad mortem aut certe caedem speciose vehi. Quae contemplatione tot colorum tanta varietate subit antiquitatem mirari.

- 50 XXXII Quattuor coloribus solis immortalia illa opera fecere—ex albis Melino, e silacis Attico, ex iubaribus Sinopide Pontica, ex nigris atramento—Apelles, Aetion,² Melanthius, Nicomachus, clarissimi pictores, cum tabulae eorum singulae oppidorum venirent opibus nunc et purpureis in parietes migrantibus et India conferente fluminum suorum limum, draconum elephantorumque saniem nulli nobilis pictura est omnia ergo meliora tunc fuere, cum minori copia ita est, quoniam, ut supra diximus, rerum, non animi pietus excubatur.
- 51 XXXIII Et nostrae aetatis insaniam in pictura non omitam. Nero princeps iusserat colosseum se pingi ex pedum linteis, incognitum ad hoc tempus ea pictura, cum peracta esset in Maianis hortis, accensa fulmine cum optima hortorum parte conflagravit. Libertus eius, cum daret Antimachus gladiatorum, publicas porticus occupavit pictura, ut constat,
- 52

¹ vehicula con Mayhoff fericula Dellefsen pericula

² Aetion Ian etion cdd (echion cd Par 6801)

^a Cicero, *Brutus*, 70 says it was Zeuxis, Polygnotus, Timanthes and others who used four colours only, while in Aetion, Nicomachus, Protogenes and Apelles everything had been brought to perfection. But the Alexander mosaic reproduces a four colour original.

^b Indigo (see § 46) and dragon's blood, which latter is really a plant product got chiefly from a species of *Dracaena* or *Pterocarpus* in Socotra.

sort of process which cannot be applied to walls but is common for ships of the navy, and indeed nowadays also for cargo vessels, since we even decorate vehicles with paintings, so that no one need be surprised that even logs for funeral pyres are painted, and we like gladiators going into the fray to ride in splendour to the scene of their death or at all events of carnage. Thus to contemplate all these numbers and great variety of colours prompts us to marvel at former generations.

XXXII Four colours^a only were used by the illustrious painters Apelles, Aetion, Melanthius and Nicomachus to execute their immortal works—of whites, Melnum, of yellow ochres, Attic, of reds, Pontic Sinopis, of blacks, atramentum—although their pictures each sold for the wealth of a whole town. Nowadays when purple finds its way even on to party-walls and when India contributes^b the mad of her rivers and the gore of her snakes and elephants, there is no such thing as high-class painting. Everything in fact was superior in the days when resources were scantier. The reason for this is that, as we said before, it is values of § 4 material and not of genius that people are now on the look-out for.

XXXIII One folly of our generation also in the matter of painting I will not leave out. The Emperor Nero had ordered his portrait to be painted on a colossal scale, on linen 120 ft high, a thing unknown hitherto, this picture when finished, in the Gardens of Maus, was struck by lightning and destroyed by fire, together with the best part of the Gardens. When a freedman of Nero was giving at Anzio a gladiatorial show, the public porticoes were

Colossal painting of Nero A.D. 54-68

gladiatorum ministriorumque omnium veris imaginibus redditis hic multis iam saeculis summus animus¹ in pictura, pingi autem gladiatoria munera atque in publico exponi coepta a C Terentio Lucano is avo suo, a quo adoptatus fuerat, triginta paria in foro per triiduum dedit tabulamque pictam in nemore Dianae posuit

53 XXXIV Nunc celebres in ea arte quam maxima brevitate percuriam, neque enim instituti operis est talis² executio, itaque quosdam vel³ in transcurso et in aliorum mentione obiter nominasse satis erit, exceptis operum claritatibus quae et ipsa conveniet attingi, sive exstant sive intercidere

54 Non constat sibi in hac parte Graecorum diligentia multas post olimpiadas celebrando pictores quam statuarios ac toreutas, primumque olympiade LXXX, cum et Phidian ipsum initio pictorem fuisse tradatui clipeumque Athenis ab eo pictum, praeterea in confesso sit LXXV tertia fuisse fratrem eius Panaenum, qui clipeum intus pinxit Elide Minervae, quam fecerat Colotes, discipulus Phidiae et ei in faciendo
55 Iove Olympio adiutor quid² quod in confesso perinde est Bularchi pictoris tabulam, in qua erat Magnetum proelium, a Candaule, rege Lydiae

¹ ambitus *con* Mayhoff

² talis *B, cd Par Lat 6797* iatis *rell* (ampla *cd Par 6801*) artis *con* Mayhoff

³ *V l* velut

^a Probably not that of Athene Parthenos, which was, on its inner side, carved in relief

covered with paintings, so we are told, containing life-like portraits of all the gladiators and assistants. This portraiture of gladiators has been the highest interest in art for many generations now, but it was Gaius Terentius Lucanus who began the practice of having pictures made of gladiatorial shows and exhibited in public, in honour of his grandfather who had adopted him he provided thirty pairs of gladiators in the forum for three consecutive days, and exhibited a picture of their matches in the Grove of Diana.

XXXIV I will now run through as briefly as *Famous painters* possible the artists eminent in painting, and it is not consistent with the plan of this work to go into such detail, and accordingly it will be enough just to give the names of some of them even in passing and in course of mentioning others, with the exception of the famous works of art which whether still extant or now lost it will be proper to particularize.

In this department the exactitude of the Greeks is *Chronolo* inconsistent, in placing the painters many Olympiads after the sculptors in bronze and chasers in metal, and putting the first in the 90th Olympiad, although *420-417* it is said that even Phidias himself was a painter to begin with, and that there was a shield ^a at Athens that had been painted by him, and although more- *Panaenu and other* over it is universally admitted that his brother Panaenus came in the 83rd Olympiad, who painted *448-445* the inner surface of a shield of Athene at Elis made by Colotes, Phidias's pupil and assistant in making the statue of Olympian Zeus. And then, is it not equally admitted that Candaules, the last King of Lydia of the Heracld line, who was also commonly known by the name of Myrsilus, gave its weight in

PLINY NATURAL HISTORY

Heracleidarum novissimo, qui et Myrsilus vocitatus est, repensam auro² tanta iam dignatio picturae erat circa Romuli id aetatem accidit necesse est, etenim duodevicensima olympiade interit Candaules aut, ut quidam tradunt, eodem anno quo Romulus, nisi fallor, manifesta iam tunc claritate
 56 artis, adeo absolute¹ quod si recipi necesse est, simul apparet multo vetustiora principia eosque, qui monochromatis pinxerint, quorum aetas non traditur, aliquanto ante fuisse, Hygiaenontem, Dinian, Charmadan et, qui primus in pictura marem a femina discreverit, Eumaium Atheniensem, figuras omnes imitari ausum, quique inventa eius excoluerit, Cimonem Cleonaeum hic catagrapha invenit, hoc est obliquas imagines, et varie formae voltus, respicientes suspicientesve vel despicientes, articulis membra distinxit, venas protulit, praeterque
 57 in vestibus rugas² et sinus invenit Panaenus quidem frater Phidiae etiam proelium Atheniensium adversus Persas apud Marathona factum pinxit

¹ VII absolute (B) aut absolute non absolute
Brotier

² vestibus rugas *Traube* veste et rugas *Gelen* veste
 brugas *B*¹ veste rugas *B*², c*l* *Tolet* verrugas *vell*

^a An unknown event, it might be the defeat of the Greeks mentioned in VII, 126, or more likely the great defeat of the Magnetes by the Treres in 651 B C (Strabo XIV, 647)

^b Candaules was in fact put to death by Gyges about 685 B C

^c See §§ 29, 15

^d By painting women's skin paler or white. This is the stage represented by vase painting from the seventh century when women were commonly coloured white men red or black

gold for a picture of the painter Bulaichus representing a battle^a with the Magnetes? So high was the value already set on the art of painting. This must have occurred at about the time of Romulus, since Candaules^b died in the 18th Olympiad, or, 708-705 B.C., according to some accounts, in the same year as Romulus, making it clear, if I am not mistaken, *trad* 717 B.C. that the art had already achieved celebrity, and in fact a perfection. And if we are bound to accept this conclusion, it becomes clear at the same time that the first stages were at a much earlier date and that the painters in monochrome,^c whose date is not handed down to us, came considerably earlier—Hygiaenon, Dinias, Charmadas and Eumarus of Athens, the last being the earliest artist to distinguish^d the male from the female sex in painting, and venturing to reproduce every sort of figure, and Cimon of Cleonae who improved on the inventions of Eumarus. It was Cimon who first invented 'catagrapha,' that is, images in 'three-quarter,'^e and who varied the aspect of the features, representing them as looking backward or upward or downward, he showed the attachments of the limbs, displayed the veins, and moreover introduced wrinkles and folds in the drapery. Indeed the brother of Phidias Panaenus even painted^f the Battle at Marathon 490 B.C. between the Athenians and Persians, so widely

^a The Greek word meant probably 'foreshortened images,' but Pliny or his Latin source rightly took it as expressing 'slanting (*obliquus*) images not profile or full face.' Cf. § 90. The context may exclude from the word *obliquus* any portraits where the eyes look back, up, or down.

^f On a wooden panel attached to a wall of the *στοα ποικίλη*, 'Painted Portico,' at Athens. The painting was attributed also to Polygnotus and to Micon, cf. § 59.

adeo iam colorum usus increbruerat adeoque ars perfecta erat, ut in eo pioëho iconicos duces pinxisse tradatur, Atheniensium Miltiadem, Callimachum, Cynaegnum, barbariorum Datim, Aitaphernen
 58 XXXV Quin immo certamen etiam picturae florente eo institutum est Corinthi ac Delphis, primusque omnium certavit cum Timagoria Chalcidense, superatus ab eo Pythius, quod et ipsius Timagorae carmine vetusto apparet, chronicorum errore non dubio

Alii quoque post hos clari fuere ante LXXX olympiadem, sicut Polygnotus Thasius, qui primus mulieres tralucida¹ veste pinxit, capita earum mitris versicoloribus operuit plurimumque picturae primus contulit, siquidem instituit os adaperire, dentes ostendere, voltum ab antiquo rigore variare
 59 huius est tabula in porticu Pompei, quae intencuiam eius fuerat, in qua dubitatur ascendentem cum clupeo pinxerit an descendentem hic Delphis aedem pinxit, hic et Athenis porticum, quae Poecile vocatur, gratuito, cum partem eius Micon mercede pingeret vel maior huic auctoritas, siquidem Amphictyones, quod est publicum Graeciae concilium,

¹ tralucida B lucida vell

^a Not real portraits if the *σποδᾶ* was built at least thirty years after 490 B C

^b The Λέσχη a covered colonnade

^c Polygnotus' contribution was a 'Sack of Troy,' Micon's a 'Battle of the Amazons' (against Theseus) See also § 57

established had the employment of colour now become and such perfection of art had been attained that he is said to have introduced actual ^a portraits of the generals who commanded in that battle, Miltiades, Cillimachus and Cynaegius on the Athenian side and Datis and Artaphernes on that of the barbarians XXXV Nay more, during the time that Panaenus flourished competitions in painting were actually instituted at Corinth and at Delphi, and on the first occasion of all Panaenus competed against Timagoras of Chalcis, being defeated by him, at the Pythian Games, a fact clearly shown by an ancient poem of Timagoras himself, the chronicles undoubtedly being in error

After those and before the 90th Olympiad there 420-417 B
 were other celebrated painters also, such as Polygnotus of Thasos who first represented women *Polygnotus
and Micon*
 in transparent diaperies and showed their heads covered with a parti-coloured headdress, and he first contributed many improvements to the art of painting, as he introduced showing the mouth wide open and displaying the teeth and giving expression to the countenance in place of the primitive rigidity. There is a picture by this artist in the Portico of Pompeius which formerly hung in front of the Curia which he built, in which it is doubtful whether the figure of a man with a shield is painted as going up or as coming down Polygnotus painted the temple ^b at Delphi and the colonnade at Athens called the Painted Portico, doing his work gratuitously, although a part of the work was painted by Micon who received a fee ^c Indeed Polygnotus was held in higher esteem, as the Amphictyones, who are a General Council of Greece, voted him entertainment

hospitia ei gratuita decievere Fuit et alius Micon, qui minoris cognominē^f distinguitur, cuius filii Timarete et ipsa pinxit

60 XXXVI LXXX autem olympiade fuere Aglaophon, Cephisodorus, Erillus,¹ Euenor, pater Parrhasii et praeceptor maximus pictoris, de quo suis annis dicemus, omnes iam inlustres, non tamen in quibus haerere expositio debeat festinans ad lumina artis, in quibus primus refulsit Apollodorus Atheniensis LXXXIII olympiade hic primus species exprimere instituit primusque gloriam penicillo iure contulit eius est sacerdos adorans et Aiax fulmine incensus, quae Pergami spectatur hodie neque ante eum tabula ullius ostenditur, quae teneat oculos

61 Ab hoc artis foies apertas Zeuxis Heracleotes intravit olympiadis LXXXV anno quarto, audenterque iam aliquid penicillum—de hoc enim adhuc loquamur—ad magnam gloriam perduxit, a quibusdam falso in LXXVIII olympiade positus, cum fuisse² necesse est Demophilum Himeraeum et Nesea Thasium, quoniam utriusque eorum discipulus fuerit ambigitur

62 in eum Apollodorus supia scriptus versum fecit, artem ipsis ablatam Zeuxim ferre secum opes quoque tantas adquisivit, ut in ostentatione³ earum

¹ Erillus *B* frilius *rell* (frillus *cd* *Par* 1 at 6797) Phryllus *Brotier* Phryllus *edd* *vett* Erillus *con* *Sillig*

² cum quo *f* *Urlichs* confusso *Traube*

³ ostentationem *Gronov*

^a Inventor of shading, and therefore called σκιαγράφος

at the public expense There was also another Micon, distinguished from the first by the surname of 'the Younger,' whose daughter Timarete also painted

XXXVI In the 90th Olympiad lived Aglaophon, Cephisodorus, Erillus, and Evenor the father and teacher of Parrhasius, a very great painter (about Parrhasius we shall have to speak when we come to his period) All these are now artists of note, yet not figures over which our discourse should linger in its haste to arrive at the luminaries of the art, first among whom shone out Apollodorus^a of Athens, in the 93d Olympiad Apollodorus was the first artist to give realistic presentation of objects, and the first to confer glory as of right upon the paint brush His are the Priest at Prayer and Ajax struck by Lightning, the latter to be seen at Peigamum at the present day There is no painting now^{*} on view by any artist before Apollodorus that arrests the attention of the eyes

The gates of art having been now thrown open by Apollodorus they were entered by Zeuxis of Heraclea in the 4th year of the 95th Olympiad, who led forward the already not unadventurous paintbrush—for this is what we are still speaking of—to great glory Some writers erroneously place Zeuxis in the 89th Olympiad, when Demophilus of Himeia and Neseus of Thasos must have been his contemporaries, as of one of them, it is uncertain which, he was a pupil Of Zeuxis, Apollodorus above recorded wrote an epigram in a line of poetry to the effect that 'Zeuxis robbed his masters of their art and carried it off with him' Also he acquired such great wealth that he advertised it at Olympia by displaying his own

- Olympiae aureis litteris in pallorum tesseris in-
 textum nomen suum ostentaret postea donare
 opera sua instituit, quod nullo pretio satis digno
 permutari¹ posse diceret, sicuti Alcmenam Agra-
 63 gantinis, Pana Archelao fecit et Penelopen, in
 qua pinxisse mores videtur, et athletam, adeoque
 in illo sibi placuit, ut versum subscriberet celebrem
 ex eo, invisurum aliquem facilius quam imitaturum
 magnificus est et Iuppiter eius in throno adstantibus
 diis et Hercules infans dracones ii² strangulans
 Alcmena matre coram pavente et Amphitryone
 64 reprehenditur tamen ceu grandior in capitibus
 articulisque, alioqui tantus diligentia, ut Agra-
 gantinis facturus tabulam, quam in templo Iunonis
 Lacinae publice dicerent, inspexerit virgines eorum
 nudas et quinque elegerit, ut quod in quaque lauda-
 tissimum esset pictura redderet pinxit et mono-
 chromata ex albo aequales eius et aemuli fuere
 Timanthes, Androcydes Eupompus, Parrhásius
 65 descendisse hic in certamen cum Zeuxide traditur
 et, cum ille detulisset uvas pictas tanto successu, ut
 in scaenam aves advolarent, ipse detulisse linteum
 pictum ita veritate repraesentata, ut Zeuxis alitum
 iudicio tumens flagitaret tandem remoto linteo

¹ permutari B? permutare *rell*

² dracones ii *Mayhoff* draconem B dracones cl *Par* 6801
 dracones in *rell*

^a King of Macedon c. 413-399 B C

^b Μωμήσεται τις μάλλον ἢ μιμησεται

^c Fingers and toes?

^d Apparently a 'Helen (cf § 66),' painted in fact for the city
 of Croton (Cic *De Invent* II, I, I, Dionys Hal *De I et Script*
Cens I)

^e Apparently paintings in pale colours on a dark ground

^f The pictures were hung on the front of the stage buildings
 in the theatre

name embroidered in gold lettering on the checked pattern of his robes. Afterwards he set about giving away his works as presents, saying that it was impossible for them to be sold at any price adequate to their value. For instance he presented his Alcmena to the city of Grgenti and his Pan to Aichelaus.^a He also did a Penelope in which the picture seems to portray morality, and an Athlete, in the latter case being so pleased with his own work that he wrote below it a line of verse^b which has hence become famous, to the effect that it would be easier for someone to carp at him than to copy him. His Zeus seated on a throne with the gods standing by in attendance is also a magnificent work, and so is the Infant Heracles throttling two Snakes in the presence of his mother Alcmena, looking on in alarm, and of Amphytryon. Nevertheless Zeuxis is criticized for making the heads and joints^c of his figures too large in proportion, albeit he was so scrupulously careful that when he was going to produce a picture^d for the city of Grgenti to dedicate at the public cost in the temple of Lacinian Hera he held an inspection of maidens of the place paraded naked and chose five, for the purpose of reproducing in the picture the most admirable points in the form of each. He also painted monochromes in white.^e His contemporaries and rivals were Timanthes, Androcydes, Eupompus and Parrhasius. This last, it is recorded, entered into a competition with Zeuxis, who produced a picture of grapes so successfully represented that birds flew up to the stage-buildings^f, whereupon Parrhasius himself produced such a realistic picture of a curtain that Zeuxis, proud of the verdict of the birds, requested that the curtain should now

*Zeuxis and
Parrhasius*

ostendi picturam atque intellecto errore concederet
 palmam ingenuo pudore, quoniam ipse volucres
 66 fefellisset, Parrhasius autem se artificem fecit
 et postea Zeuxis pinxisse puerum uvas ferentem, ad
 quas cum advolassent aves,¹ eadem ingenuitate
 processit iratus operi et dixit 'uvas melius pinxi
 quam puerum, nam si et hoc consummassem, aves
 timere debuerant' fecit et figlina opera, quae sola
 in Ambracia relictæ sunt, cum inde Musas Fulvius
 Nobilior Romam transferret Zeuxidis manu Romae
 Helena est in Philippi porticibus, et in Concordiae
 delubro Marsyas religatus

67 Parrhasius Ephesi natus et ipse multa contulit
 primus symmetrian picturae dedit, primus acutias
 vultus, elegantiam capilli, venustatem² oris, con-
 fessione artificum in huius extremis palmam adeptus
 haec est picturae summa subtilitas³ corpora enim
 pingere et media rerum est quidem magni operis,
 sed in quo multi gloriam tulerint, extrema cor-
 porum facere et desinentis picturae modum includere
 68 rarum in successu artis invenitur ambue enim se
 ipsa debet extremitas et sic desinere, ut promittat
 alia et⁴ post se⁵ ostendatque etiam quae occultat
 hanc ei gloriam concessere Antigonus et Xenocrates,

¹ *V l* advolarent aves *aut* advolasset avis *aut* advolaret avis

² *V l* vetustatem

³ subtilitas *B* sublimitas *rell*

⁴ alia et *Mayhoff* aliae *cd* *Leid* *Voss m l* alia *rell*

⁵ posse *edd veti* pone se *con Ian* alias post se *Traube*

^a The picture 'Helen' mentioned (not named) in § 64 The porticoes were built by L. Marcius Philippus in 29 B C

be drawn and the picture displayed, and when he realized his mistake, with a modesty that did him honour he yielded up the prize, saying that whereas he had deceived birds Parrhasius had deceived him, an artist. It is said that Zeuxis also subsequently painted a Child Carrying Grapes, and when birds flew to the fruit with the same frankness as before he strode up to the picture in anger with it and said, 'I have painted the grapes better than the child, as if I had made a success of that as well, the birds would inevitably have been afraid of it.' He also executed works in clay, the only works of art that were left at Ambriacia when Fulvius Nobilior removed 183 B C the statues of the Muses from that place to Rome. There is at Rome a Helena^a by Zeuxis in the Porticoes of Philippus, and a Maisyas Bound, in the Shrine of Concord.

Parrhasius also, a native of Ephesus, contributed *Parrhasius* much to painting. He was the first to give proportions to painting and the first to give vivacity to the expression of the countenance, elegance of the hair and beauty of the mouth, indeed it is admitted by artists that he won the palm in the drawing of outlines. This in painting is the high-water mark of refinement, to paint bulk and the surface within the outlines, though no doubt a great achievement, is one in which many have won distinction, but to give the contour of the figures, and make a satisfactory boundary where the painting within finishes, is rarely attained in successful artistry. For the contour ought to round itself off and so terminate as to suggest the presence of other parts behind it also, and disclose even what it hides. This is the distinction conceded to Parrhasius by

- qui de pictura scripsere, praedicantes quoque, non solum confitentes, et alius multa graphidis vestigia exstant in tabulis ac membranis eius, ex quibus proficere dicuntur artifices. minor tamen videtur sibi
69 comparatus in mediis corporibus exprimendis pinxit demon Atheniensium argumento quoque ingenioso ostendebat nunquam varium iacundum iniustum inconstantem,¹ eundem exorabilem clementem misericordem, gloriosum,² excelsum humilem, ferocem fugacemque et omnia pariter. idem pinxit et Thesea, quae Romae in Capitolio fuit, et nauarchum thoriacatum, et in una tabula, quae est Rhodi, Meleagrum, Herculem, Persea, haec ibi tot fulmine ambusta neque oblitterata hoc ipso miraculum augeat
70 pinxit et archigallum, quam picturam amavit Tiberius princeps atque, ut auctor est Deculus,³ h[ic] LX⁴ aestimatum cubiculo suo inclusit pinxit et Thressam⁵ nutricem infantemque in manibus eius et Philiscum et Libeium patrem adstante Virtute, et pueros duos, in quibus spectatur securitas aetatis et simplicitas, item sacerdotem adstante
71 puero cum acerra et corona sunt et duae picturae eius nobilissimae, hoplites in certamine ita decurrens, ut sudare videatur, alter arma deponens, ut

¹ incontinentem O Jahn

² lac Mayhoff

³ deculo B depulo, de populo aut sim. rell. Decius Gelen. Decius Epulo edd. vet. Decius Eculeo Hermolaus Barbarus

⁴ LX Ian. LX B. LX rell.

⁵ thressam B. cressam aut chressam rell.

^a Or 'traces of his draughtsmanship'

^b Or 'them in various moods'

^c Until it perished in the fire of 70 B.C.

Antigonus and Xenocrates who have written on the art of painting, and they do not merely admit it but actually advertise it. And there are many other pen-sketches ^a still extant among his panels and parchments, from which it is said that artists derive profit. Nevertheless he seems to fall below his own level in giving expression to the surface of the body inside the outline. His picture of the People of Athens also shows ingenuity in treating the subject, since he displayed them as fickle, ^b choleric, unjust and variable, but also placable and merciful and compassionate, boastful (and), lofty and humble, fierce and timid—and all these at the same time. He also painted a Theseus which was once ^c in the Capitol at Rome, and a Naval Commander in a Cuirass, and in a single picture now at Rhodes figures of Meleager, Heracles and Perseus. This last picture has been three times struck by lightning at Rhodes without being effaced, a circumstance which in itself enhances the wonder felt for it. He also painted a High Priest of Cybele, a picture for which the Emperor Tiberius conceived an affection and kept A D 14-37 it shut up in his bedchamber, the price at which it was valued according to Deculo being 6,000,000 sesterces. He also painted a Thracian Nurse with an Infant in her Arms, a Philiscus, and a Father Liber or Dionysus attended by Virtue, and Two Children in which the carefree simplicity of childhood is clearly displayed, and also a Priest attended by Boy with Incense-box and Chaplet. There are also two very famous pictures by him, a Runner in the Race in Full Armour who actually seems to sweat with his efforts, and the other a Runner in Full Armour Taking off his Arms, so lifelike that he can

- anhelare sentiatui laudantur et Aeneas Castorque ac Pollux in eadem tabula, item Telephus, Achilles, Agamemnon, Ulixes fecundus artifex, sed quo nemo insolentius usus sit gloria artis, namque et cognomina usuipavit habiodiaetum se appellando alisque versibus principem artis et eam ab se consummatam, super omnia Apollinis se radice ortum et Herculem, qui est Landi, talem a se pictum, qualem
 72 saepe in quiete vidisset, et cum ¹ magnis suffragis superatus a Timanthe esset ² Sami in Aiace armorumque iudicio, herois nomine se moleste ferre dicebat, quod iterum ab indigno victus esset—Pinxit et minoribus tabellis libidines, eo genere petulantis ioci se reficiens ³
 73 Nam Timanthus vel plurimum adfuit ingenii eius enim est Iphigenia oratorum laudibus celebrata, qua stante ad aras peritura cum maestos pinxisset omnes praecipueque patrum et iustitiae omnem imaginem consumpsisset, patris ipsius voltum velavit,
 74 quem digne non poterat ostendere sunt et alia ingenii eius exempla, veluti Cyclops dormiens in parvula tabella, cuius et sic magnitudinem exprimere cupiens pinxit iuxta Satyros thyrsos pollicem eius

¹ et cū (= cum) *Mayhoff* ergo

² Timanthe esset *Mayhoff* timanthesest *B¹* timanthe (aut thimante) est *cdd*

³ pinxit reficiens post Ulixes 71 transp *Ulixes*

^a Showing the healing of Telephus by rust from Achilles' sword, with Agamemnon and Odysseus looking on

^b When the arms of dead Achilles were awarded to Odysseus, Ajax became mad and at night unknowingly killed sheep in the belief that he was killing his enemies

^c E.g. Cicero *De Oratore* 74

^d A picture found at Pompeii may be a copy of this

be perceived to be panting for breath His Aeneas, Castor and Pollux (Polydeuces), all in the same picture, are also highly praised, and likewise his group^a of Telephus with Achilles, Agamemnon and Odysseus Parrhasius was a prolific artist, but one who enjoyed the glory of his art with unparalleled arrogance, for he actually adopted certain surnames, calling himself the 'Bon Vivreur,' and in some other verses 'Prince of Painters,' who had brought the art to perfection, and above all saying he was sprung from the lineage of Apollo and that his picture of Heracles at Lindos presented the hero as he had often appeared to him in his dreams Consequently when defeated by Timanthes at Samos by a large majority of votes, the subject of the pictures being Ajax and the Award of the Arms, he used to declare in the name of his hero that he was indignant at having been defeated a second time by an unworthy opponent^b He also painted some smaller pictures of an immodest nature, taking his recreation in this sort of wanton amusement

To return to Timanthes—he had a very high degree of genius Orators^c have sung the praises of his Iphigenia,^d who stands at the altar awaiting her doom, the artist has shown all present full of sorrow, and especially her uncle,^e and has exhausted all the indications of grief, yet has veiled the countenance of her father himself^f whom he was unable adequately to portray There are also other examples of his genius, for instance a quite small panel of a Sleeping Cyclops, whose gigantic stature he aimed at representing even on that scale by painting at his side some Satyrs measuring the size of his thumb

^a Menelaus^f Agamemnon

- metientes atque in unius huius operibus intelligitur plus semper quam pingitur et, cum sit ars summa ingenium tamen ultra artem est pinxit et heroa absolutissimi operis, artem ipsam complexus viros pingendi, quod opus nunc Romae in templo Pacis est
- 75 Euxinidas hac aetate docuit Aristiden, praeclarum artificem, Eupompus Pamphilum, Apellis praeceptorem est Eupompi victor certamine gymnico palmam tenens ipsius auctoritas tanta fuit, ut divideret picturam¹ genera, quae ante eum duo fuerent—Helladicum et Asiaticum² appellabant—propter hunc, qui erat Sicyonius, diviso Helladico tria facta sunt, Ionicum, Sicyonium, Atticum
- 76 Pamphili cognatio et proelium ad Phliuntem ac victoria Atheniensium, item Ulixes in rate ipse Macedo natione, sed³ primus in pictura omnibus litteris eruditus, praecipue arithmetica et geometria, sine quibus negabat artem perfici posse, docuit neminem talento minoris—annuis X D⁴—, quam mercedem at Apelles et Melanthius dedere ei
- 77 huius auctoritate effectum est Sicyone primum, deinde in tota Graecia, ut pueri ingenui omissam

¹ picturam *Mayhoff* picturam in *cdd* (ras in *cd Par* 6801 a in *cd Leid Voss*)

² asiaticum *B* asianum *B*¹ ? asiticum quod asiaticum *rell* quod asiaticum *Gelen*

³ *lac Mayhoff*

⁴ X D *B, cd Leid Voss* D *rell (om cd Flor Ricc)*

^a The elder, cf §§ 108, 111 and note on pp 410–411

^b Possibly the capture of Phlius by the Spartans in 379 B C and the sea victory of Athens over the Spartans at Naxos in

with a wand. Indeed Timanthes is the only artist in whose works more is always implied than is depicted, and whose execution, though consummate, is always surpassed by his genius. He painted a hero which is a work of supreme perfection, in which he has included the whole art of painting male figures, this work is now in the Temple of Peace in Rome.

It was at this period that Euxinidas had as his pupil the famous artist Aristides,^a that Eupompus taught Pamphilus who was the instructor of Apelles. A work of Eupompus is a Winner in a Gymnastic Contest holding a Palm branch. Eupompus's own influence was so powerful that he made a fresh division of painting, it had previously been divided into two schools, called the Helladic or Grecian and the Asiatic, but because of Eupompus, who was a Sicyonian, the Grecian school was sub-divided into three groups, the Ionic, Sicyonian and Attic. To Pamphilus belong Family Group, and a Battle at Phlius and a Victory of the Athenians,^b and also Odysseus on his Raft. He was himself a Macedonian by birth, but <was brought up at Sicyon, and> was the first painter highly educated in all branches of learning, especially arithmetic and geometry, without the aid of which he maintained art could not attain perfection. He took no pupils at a lower fee than a talent, at the rate of 500 drachmae per annum,^c and this was paid him by both Apelles and Melanthius. It was brought about by his influence, first at Sicyon and then in the whole of Greece as well, that children

*Eupompus
and
Pamphilus*

376, or the defeat of Sicyonians by Phliasians and Athenians in 367 B.C. The painting may have represented the last event only.

^c So that the course of study could last 12 years.

ante¹ graphicen [hoc est picturam²] in buxo, docerentui ieciperetuique ais ea in primum gradum liberalium sempei quidem honos ei fuit, ut ingenui eam exerceant, mox ut honesti, perpetuo interdicto ne servitia docerentui ideo neque in hac neque in torentice ullius, qui servierit, opera celebrantur

78 Clari et centesima septima olympiade exstiterē Aetion ac Theumachus Aetionis sunt nobiles picturae Liber pater, item Tragoedia et Comoedia, Semiramis ex ancilla regnum apiscens, anus lampadas praeferens et nova nupta verecundia notabilis

79 Verum omnes prius genitos futurosque postea superavit Apelles Cōus olympiade centesima duodecima picturae plura solus prope quam ceteri omnes contulit, voluminibus etiam editis, quae doctrinam eam continent praecipua eius in arte venustas fuit, cum eadem aetate maximi pictores essent, quorum opera cum admiraretur, omnibus conlaudatis deesse illam suam venerem³ dicebat, quam Graeci *χάριτα* vocant, cetera omnia contigisse, 80 sed hac sola sibi neminem parem et aliam gloriam usurpavit, cum Protogenis opus immensi laboris ac

¹ omissā (= omissam) ante *coni Mayhoff* omnia ante *B* omnia anti *vell* ante omnia *edd vell* omnes artem *C F Hermann*

² *seclud Ulrichs*

³ venustatem *Frohner* (*cp gratiam Quintil XII 10 6*)

^a The whole of statuary as contrasted with painting

^b Sammuramat, princess of Assyria c 800 B C

^c Really of Ephesus, but some of his famous works were at Cos

of free birth were given lessons in drawing on box-wood, which had not been included hitherto, and that this art was accepted into the front rank of the liberal sciences. And it has always consistently had the honour of being practised by people of free birth, and later on by persons of station, it having always been forbidden that slaves should be instructed in it. Hence it is that neither in painting nor in the art of statuary^a are there any famous works that were executed by any person who was a slave.

In the 107th Olympiad Aetion and Therimachus also attained outstanding distinction. Famous paintings by Aetion are a Father Liber or Dionysus, Tragedy and Comedy and Semiramis^b the Slave Girl Rising to a Throne, and the Old Woman carrying Torches, with a Newly Married Bride, remarkable for her air of modesty.

But it was Apelles of Cos^c who surpassed all the painters that preceded and all who were to come after him, he dates in the 112th Olympiad. He singly contributed almost more to painting than all the other artists put together, also publishing volumes containing the principles of painting. His art was unrivalled for graceful charm, although other very great painters were his contemporaries. Although he admired their works and gave high praise to all of them, he used to say that they lacked the glamour that his work possessed, the quality denoted by the Greek word *charis*, and that although they had every other merit, in that alone no one was his rival. He also asserted another claim to distinction when he expressed his admiration for the immensely laborious and infinitely meticulous work

352-349 B C
*Aetion and
Therimachus*

Apelles

332-329 B C

*Apelles and
Protogenes*

cuius supra modum anxiae minaretur, dixit enim omnia sibi cum illo paria esse aut illi meliora, sed uno se praestare, quod manum de tabula sciret¹ tollere, memorabili praecepto nocere saepe nimiam diligentiam fuit autem non minoris simplicitatis quam artis Melanthio dispositione cedebat, Asclepiodoro de² mensuris, hoc est quanto quid a quoque distare deberet

- 81 Scitum inter Protogenen et eum quod accidit ille Rhodi vivebat, quo cum Apelles adnavigasset, avidus cognoscendi opera eius fama tantum sibi cogniti, continuo officinam petiit aberat ipse, sed tabulam amplae magnitudinis in machina aptatam una³ custodiebat anus haec foris esse Protogenen respondit interrogavitque, a quo quaesitum diceret ‘ab hoc,’ inquit Apelles adieptoque penicillo lineam
82 ex colore duxit summae tenuitatis per tabulam et reverso Protogeni quae gesta erant anus indicavit ferunt artificem protinus contemplatum subtilitatem dixisse Apellen venisse, non cadere in alium tam absolutum opus, ipsumque alio colore tenuiorem lineam in ipsa illa duxisse abeuntemque praecepisse, si redisset ille, ostenderet adiceretque

¹ sciret *B* non sciret *rell*

² de fortasse delendum (*Mayhoff*, qui et dimensuris coni.)

³ una *B* picturae una *rell*

^a The expression ‘*manum de tabula*,’ ‘hand from the picture,’ was a saying which expressed ‘That’s enough’

^b Pliny does not say whether it was straight or wavy, or an outline of some object

of Protogenes, for he said that in all respects his achievements and those of Protogenes were on a level, or those of Protogenes were superior, but that in one respect he stood higher than he knew when to take his hand away from a picture ^a—a noteworthy warning of the frequently evil effects of excessive diligence. The candour of Apelles was however equal to his artistic skill. He used to acknowledge his inferiority to Melanthius in grouping, and to Asclepiodorus in nicety of measurement, that is in the proper space to be left between one object and another.

A clever incident took place between Protogenes and Apelles. Protogenes lived at Rhodes, and Apelles made the voyage there from a desire to make himself acquainted with Protogenes's works, as that artist was hitherto only known to him by reputation. He went at once to his studio. The artist was not there but there was a panel of considerable size on the easel prepared for painting, which was in the charge of a single old woman. In answer to his enquiry, she told him that Protogenes was not at home, and asked who it was she should report as having wished to see him. 'Say it was this person,' said Apelles, and taking up a brush he painted in colour across the panel an extremely fine line ^b, and when Protogenes returned the old woman showed him what had taken place. The story goes that the artist, after looking closely at the finish of this, said that the new arrival was Apelles, as so perfect a piece of work talked with nobody else, and he himself, using another colour, drew a still finer line exactly on the top of the first one, and leaving the room told the attendant to show it to the

- hunc esse quem quaereret atque ita evenit
 revertit enim Apelles ét vinci eiubescens tertio
 colore lineas secuit nullum relinquens amplius
 83 subtilitati locum at Protogenes victum se con-
 fessus in portum devolavit hospitem quaeiens,
 placuitque sic eam tabulam posteis tradi omnium
 quidem, sed artificum praecipuo miraculo con-
 sumptam eam pioie incendio Caesaris domus in
 Palatio audio, spectatam nobis¹ ante, spatiose²
 nihil aliud continentem quam³ lineas visum effu-
 gientes, inter egregia multorum opera inani similem
 et eo ipso allicientem omnique opere nobilioiem
 84 Apelli fuit alioqui perpetua consuetudo numquam
 tam occupatum diem agendi, ut non lineam ducendo
 exerceret aitem, quod ab eo in proverbium venit
 idem perfecta opera proponebat in pergula tran-
 seuntibus atque, ipse post tabulam latens, vitia
 quae notarentur auscultabat, vulgum diligentioiem
 85 iudicem quam se praeferens, feruntque reprehensum
 a sutoie, quod in crepidis una pauciores intus fecisset
 ansas, eodem postero die superbo emendatione
 pristinae admonitionis cavillante circa crus, indig-

¹ nobis *edd* Rhodi *Mayhoff* olim *Gronov*

² I l spatiore (spatio sed *B*) spatio *Pintianus*

³ I l quam in quam III *Gronov*

^a Pliny surely indicates that Apelles drew a yet finer line on top of the other two down their length

^b Probably an outline of some object

^c *Nulla dies sine linea*, 'No day without a line'

visitor if he returned and add that this was the person he was in search of, and so it happened, for Apelles came back, and, ashamed to be beaten, cut ^a the lines with another in a third colour, leaving no room for any further display of minute work. Hereupon Protogenes admitted he was defeated, and flew down to the harbour to look for the visitor, and he decided that the panel should be handed on to posterity as it was, to be admired as a marvel by everybody, but particularly by artists. I am informed that it was burnt in the first fire which occurred in Caesar's palace on the Palatine, it had ^{A D 4} been previously much admired by us, on its vast surface containing nothing else than the almost invisible lines, so that among the outstanding works of many artists it looked like a blank space, and by that very fact attracted attention and was more esteemed than every masterpiece there.

Moreover it was a regular custom with Apelles never to let a day of business to be so fully occupied that he did not practise his art by drawing a line,^b which has passed from him into a proverb ^c. Another habit of his was when he had finished his works to place them in a gallery in the view of passers by, and he himself stood out of sight behind the picture and listened to hear what faults were noticed, rating the public as a more observant critic than himself. And it is said that he was found fault with by a shoemaker because in drawing a subject's sandals he had represented the loops in them as one too few, and the next day the same critic was so proud of the artist's correcting the fault indicated by his previous objection that he found fault with the leg, but Apelles indignantly looked out from behind the

natum prospexisse denuntiantem, ne supra crepidam
 sutor iudicaret, quod et ipsum in proverbium abiit
 fuit enim et comitas illi, propter quam gratior
 Alexandro Magno frequentem in officinam venti-
 tantam—nam, ut diximus, ab alio se pingi vetuerat
 edicto—, sed in officina impente multa disserenti
 silentium comitem suadebat, videri eum dicens a
 86 pueris, qui colores terebant tantum erat auctori-
 tati iuris in regem alioqui iacundum quamquam
 Alexandri honorem ei claustrum perhibuit exemplo
 namque cum dilectam sibi e pallacis suis praecipue,
 nomine Pancaspen,¹ nudam pingi ob admirationem
 formae ab Apelle iussisset eumque, dum pariet,
 captum amore sensisset, dono dedit ei,² magnus
 animo, maior imperio sui nec minori hoc facto quam
 87 victoria alia, quia³ ipse se vicit, nec totum tantum
 suum, sed etiam adfectum donavit artifice, ne
 dilectae quidem respectu motus, cum modo regis ea
 fuisset, modo pictoris esset sunt qui Venerem
 anadyomenen ab illo pictam exemplari putent
 Apelles et in aemulis benignus Protogeni digna-

¹ pancaspen *B* campaspen aut em *rell* Pancasten *Sillig*

² ei *Ian* et

³ alia quia *M Hertz* alia *Urlichs* alia qua *B* aliqua *rell*

^a *Ne sutor ultra crepidam* "Let a shoemaker stick to his last"

picture and rebuked him, saying that a shoemaker in his criticism must not go beyond the sandal—a remark that has also passed into a proverb ^a In fact he also possessed great courtesy of manners, which made him more agreeable to Alexander the Great, who frequently visited his studio—for, as we have said, Alexander had published an edict forbidding any other artist to paint his portrait, but in the studio Alexander used to talk a great deal about painting without any real knowledge of it, and Apelles would politely advise him to drop the subject, saying that the boys engaged in grinding the colours were laughing at him so much power did his authority exercise over a King who was otherwise of an unascible temper. And yet Alexander conferred honour on him in a most conspicuous instance, he had such an admiration for the beauty of his favourite mistress, named Pancaspe, that he gave orders that she should be painted in the nude by Apelles, and then discovering that the artist while executing the commission had fallen in love with the woman, he presented her to him, great-minded as he was and still greater owing to his control of himself, and of a greatness proved by this action as much as by any other victory because he conquered himself, and presented not only his bedmate but his affection also to the artist, and was not even influenced by regard for the feelings of his favourite in having been recently the mistress of a monarch and now belonged to a painter. Some persons believe that she was the model from which the Aphrodite Anadyomene (Rising from the Sea) was painted. It was Apelles also who, kindly among his rivals, first established the reputation of

*Apelles and
Alexander*

VII, 120

88 tionem prius Rhodi constituit sordebat suis, ut
 plerumque domestica, percontantique, quanti li-
 ceret opera effecta, parvum nescio quid dixerat,
 at ille quinquagenis talentis poposcit famamque
 dispersit, se emere, ut pro suis venderet ea res
 concitavit Rhodios ad intellegendum artificem, nec
 nisi argentibus pretium cessit

Imagines¹ adeo similitudinis indiscietae pinxit,
 ut—incredibile dictu—Apio grammaticus scriptum
 reliquerit, quendam ex facie hominum divinantem,
 quos metoposcos vocant, ex his dixisse aut futurae
 89 mortis annos aut praeteritae vitae² non fuerat ei
 gratia in comitatu Alexandri cum Ptolemaeo, quo
 regnante Alexandriam vi tempestatis expulsus,
 subornato fraude aemulorum plano regio invitatus,
 ad cenam venit indignantique Ptolemaeo et vocatores
 suos ostendenti, ut diceret, a quo eorum invitatus
 esset, accepto carbone extincto e foculo imaginem
 in pariete delineavit, adgnoscente voltum plani rege
 90 inchoatum protinus pinxit et Antigonū regis
 imaginem altero lumine orbatū³ primus excogitata
 ratione vitia condendi, obliquam namque fecit, ut,

¹ imagines *Gelen* imaginem

² vitae *add Brunn*

³ orbatū *Mayhoff* orbatam

^a The word *μετωποσκόπος* means one who gazes at (examines) foreheads

^b Ptolemy I, who died in 283 B C

^c 382–301 B C One of Alexander's generals, and King of Macedonia 306–301

Protogenes at Rhodes Protogenes was held in low esteem by his fellow-countrymen, as is usual with home products, and, when Apelles asked him what price he set on some works he had finished, he had mentioned some small sum, but Apelles made him an offer of fifty talents for them, and spread it about that he was buying them with the intention of selling them as works of his own. This device aroused the people of Rhodes to appreciate the artist, and Apelles only parted with the pictures to them at an enhanced price.

He also painted portraits so absolutely lifelike that, incredible as it sounds, the grammarian Apio has left it on record that one of those persons called 'physiognomists,'^a who prophesy people's future by their countenance, pronounced from their portraits either the year of the subjects' deaths hereafter or the number of years they had already lived. Apelles had been on bad terms with Ptolemy in Alexander's retinue. When this Ptolemy^b was King of Egypt, Apelles on a voyage had been driven by a violent storm into Alexandria. His rivals maliciously suborned the King's jester to convey to him an invitation to dinner, to which he came. Ptolemy was very indignant, and paraded his hospitality-stewards for Apelles to say which of them had given him the invitation. Apelles picked up a piece of extinguished charcoal from the hearth and drew a likeness on the wall, the King recognizing the features of the jester as soon as he began the sketch. He also painted a portrait of King Antigonos^c who was blind in one eye, and devised an original method of concealing the defect, for he did the likeness in 'three-quarter,' so that the feature that was lacking in the

*Apelles and
Ptolemy I*

*Apelles and
Antigonus*

quod deerat componi, picturae deesse¹ potius videretur, tantumque eam partem e facie ostendit, quam totam poterat ostendere sunt inter opera eius et expunantium imagines quae autem nobilissima
 91 sint, non est facile dictum Venerem exeuntem e manu divus Augustus dicavit in delubro patris Caesaris, quae anadyomene vocatur, versibus Graecis tali opere,² dum³ laudatur, victo⁴ sed⁵ illustrato⁶ cuius inferiorem partem corruptam qui reficeret non potuit reporni, verum ipsa iniuria cessit in gloriam artificis consenuit haec tabula carie, aliamque pro ea substituit Nero in principatu suo
 92 Dorothei manu Apelles inchoaverat et illam Venerem Coi,⁷ superatius etiam⁸ illam suam priorem invidit mors peracta parte, nec qui succederet operi ad praescripta liniamenti inventus est pinxit et Alexandrium Magnum fulmen tenentem in templo Ephesiae Dianae viginti talentis auri digiti eminere videntur et fulmen extra tabulam esse—legentes meminerunt omnia ea quattuor coloribus facta, manipietum eius tabulae in nummo⁹ aureo¹⁰ mensura¹¹ accepit, non numero

¹ adesse *con* Mayhoff

tantopere Frohner

² aevo dum J Müller

⁴ victa *edd* *vett* invicto Schneidewin vitio Frohner
 <aervis victa> Mayhoff

⁵ est Frohner

⁶ illustrata *edd* *vett* versibus Graecis dum laudatur, tali opere <aervis> victo, sed illustrato *con* Mayhoff

⁷ V l Cois

⁸ V l famam fama Urlichs

⁹ in numero *cd* Par 6801 immane *cd* Flor Rice

¹⁰ auro olim Gelen (del nummo) aureos *edd* *vett*

¹¹ V l mensuram

subject might be thought instead to be absent in the picture, and he only showed the part of the face which he was able to display as unmutilated. Among his works there are also pictures of persons at the point of death. But it is not easy to say which of his productions are of the highest rank. His Aphrodite emerging from the Sea was dedicated by his late lamented Majesty Augustus in the Shrine of his father Caesar, it is known as the Anadyomene, this like other works is eclipsed^a yet made famous by the Greek verses which sing its praises, the lower part of the picture having become damaged nobody could be found to restore it, but the actual injury contributed to the glory of the artist. This picture however suffered from age and rot, and Nero when emperor substituted another for it, a work by Dorotheus. Apelles had also begun on another Aphrodite at Cos, which was to surpass even his famous earlier one, but death grudged him the work when only partly finished, nor could anybody be found to carry on the task, in conformity with the outlines of the sketches prepared. He also painted Alexander the Great holding a Thunderbolt, in the temple of Artemis at Ephesus, for a fee of twenty talents in gold. The fingers have the appearance of projecting from the surface and the thunderbolt seems to stand out from the picture—readers must remember^b that all these effects were produced by four colours, the artist received the price of this picture in gold coin measured by weight,^c not

*Various
Works by
Apelles*

^a 'Overcome' or 'surpassed' by the poet, who can express more than the painter can, for the painter can represent one moment only. ^b See § 50

^c It is suggested that this means that the price was the equivalent (in gold coins) of the weight of the panel

PLINY NATURAL HISTORY

- 93 pinxit et megabyzi, sacerdotis Dianae Ephesiae, pompam, Clitum cum equo ad bellum festinantem, galeam poscenti armigerum porrigentem¹ Alexandium et Philippum quotiens pinxerit, enumerare supervacuum est. mirantur eius Habionem Sami, Menandrum, regem Cariae, Rhodi, item Antaeum, Alexandriae Goigosthenen tiagoedum, Romae Castorem et Pollucem cum Victoria et Alexandro Magno, item Belli imaginem restrictis ad terga
94 manibus, Alexandro in cuius triumphante quas utrasque tabulas divus Augustus in fori sui celeberrimis partibus dicaverat simplicitate moderata, divus Claudius plius existimavit utrisque excisa Alexandri facie divi Augusti imagines addere eiusdem arbitrantur manu² esse et in Dianae³ templo Herculem aversum, ut, quod est difficillimum, faciem eius ostendat verius pictura quam promittat pinxit et heroi nudum eaque pictura naturam ipsam
95 provocavit est et equus eius, sive fuit, pictus in certamine, quo iudicium ad mutas quadripedes provocavit ab hominibus namque ambitu praevalere aemulos sentiens singulorum picturas inductis equis ostendit Apellis tantum equo adhinnivere idque et postea semper evenit, ut experimentum
96 artis illud ostentaretur fecit et Neoptolemum ex⁴

¹ armigero porrigente *con* Mayhoff

² manum *B*

³ Dianae *Preller* annae *B* antoniae *rell*

⁴ <pugnantem> ex *con* Mayhoff lac post Persas
Urlichs

^a Cf § 27 and Serv ad *Aen* I, 294

^b *I e* he did not appropriate them for himself

counted. He also painted a Procession of the Magabyzus, the priest of Artemis of Ephesus, a Citharus with Horses hastening into battle, and an armour-bearer handing someone a helmet at his command. How many times he painted Alexander and Philip it would be superfluous to recount. His Habron at Samos is much admired, as is his Menander King of Cania, at Rhodes, likewise his Antaeus, and at Alexandria, his Gorgosthenes the Tragic Actor, and at Rome his Castor and Pollux with Victory and Alexander the Great, and also his figure of War^a with the Hands Tied behind, with Alexander riding in Triumph in his Chariot. Both of these pictures his late lamented Majesty Augustus with restrained good taste^b had dedicated in the most frequented parts of his forum, the emperor Claudius however thought it more advisable to cut out the face of Alexander from both works and substitute portraits of Augustus. The Heracles with face Averted in the temple of Diana is also believed to be by his hand—so drawn that the picture more truly displays Heracles' face than merely suggests it to the imagination—a very difficult achievement. He also painted a Nude Hero, a picture with which he challenged Nature herself. There is, or was, a picture of a Horse by him, painted in a competition, by which he carried his appeal for judgement from mankind to the dumb quadrupeds, for perceiving that his rivals were getting the better of him by intrigue, he had some horses brought and showed them their pictures one by one, and the horses only began to neigh when they saw the horse painted by Apelles, and this always happened subsequently, showing it to be a sound test of artistic skill. He

PLINY NATURAL HISTORY

equo aduersus Persas, Aichelaum cum uxore et filia, Antigonum thoriacatum cum equo incedentem peritiores artis praeferunt omnibus eius operibus eundem regem sedentem in equo et Dianam sacrificantium virginum choro mixtam, quibus vicisse Homerum versus videtur id ipsum describentis pinxit et quae pingi non possunt, tonitrua fulgura fulgurisque, Biontem, Astiapien et Ceraunobolian appellant

97 Inventa eius et ceteris profuerit in arte, unum imitari nemo potuit, quod absoluta operam amento inlincbat ita tenui, ut id ipsum, cum¹ reperi-² percussus claritates³ colorum⁴ omnium⁵ excitaret custodiretque a pulvere et sordibus, ad manum intuenti⁶ demum appareret, sed et luminum⁷ ratione magna, ne claritas colorum aciem offenderet veluti per lapidem specularem intuentibus et e longinquo eadem res nimis floridis coloribus austeritatem occulte daret

98 Aequalis eius fuit Aristides Thebanus is omnium primus animum pinxit et sensus hominis expressit,

¹ cum *add* *Mayhoff*

- reperi-² percussus *B*¹ reperi-² percussu *rell*

³ claritatis *B*, *cd* *Par* 6801 claritates *rell*

⁴ colorem *B* colorum *rell* oculorum *edd* *rell*

⁵ omnium (= omnium) *Mayhoff* album *B*¹ alium *B*²
om *rell* album *Traube*

⁶ intuenti et *B*

⁷ et luminum *Mayhoff* etiam *B*¹ etiam *B*² et cum
rell et tum *Hermolaus Barbarus*

^a One of Alexander's generals

^b Two soldiers with this name are recorded as serving under Alexander

^c The One eyed See § 90 and note

also did a Neoptolcmus^a on Horseback fighting against the Persians, an Aichelaus^b with his Wife and Daughter, and an Antigonus^c with a Breast-plate marching with his horse at his side. Connoisseurs put at the head of all his works the portrait of the same king seated on horseback, and his Artemis in the midst of a band of Maidens offering a Sacrifice, a work by which he may be thought to have surpassed Homer's verses^d describing the same subject. He even painted things that cannot be represented in pictures—thunder, lightning and thunderbolts, the pictures known respectively under the Greek titles of Bionte, Astiape and Ceraunobolia.

His inventions in the art of painting have been useful to all other painters as well, but there was one which nobody was able to imitate. When his works were finished he used to cover them over with a black varnish of such thinness that its very presence, while its reflexion threw up the brilliancy of all the colours and preserved them from dust and dirt, was only visible to anyone who looked at it close up, but also employing great calculation of lights, so that the brilliancy of the colours should not offend the sight when people looked at them as if through muscovy-glass and so that the same device from a distance might invisibly give sombreness to colours that were too brilliant.

Contemporary with Apelles was Aristides^e of Thebes. He was the first of all painters who depicted the mind and expressed the feelings of a human

^a *Olysses* VI, 102 ff. which describe Artemis and maidens wildly ranging amongst boars and deer, not sacrificing. The mistake arises from the two verbs *θύνω*.

^e The younger, grandson of Aristides, cf. § 75 and note on pp. 410 and 411.

- quae vocant Graeci ἤθη, item perturbationes,
durior paulo in coloribus ¹ huius opera ¹ oppido
capto ad matris morientis ex volnere mammam
adiepens infans, intellegiturque sentire mater et
timere, ne emortuo lacte ² sanguinem lambat quam
tabulam Alexander Magnus transtulerat Pellam in
99 patriam suam idem pinxit proelium cum Persis,
centum homines tabula ea complexus pactusque in
singulos mnas denas a tyranno Elatensium Mnasone
pinxit et currentes quadrigas et supplicentem paene
cum voce et venatores cum captiua et Leontion
Epicuri et anapauomenen propter fratris amorem,³
item Liberum et Ariadnen ⁴ spectatos Romae in
aede Cereris tragoedum et puerum in Apollinis,
100 cuius tabulae gratia interit pictoris inscitia, cui
teigendam eam mandaverat M Iunius praetor sub
die ludorum Apollinarium spectata est et in aede
Fidei in Capitolio senis cum lyra puerum docentis
pinxit et aegrum sine fine laudatum tantumque rite
valuit, ut Attalus rex unam tabulam eius centum
talentis emisse tradatur
101 Simul, ut dictum est, et Protogenes floruit
patria ei Caunus, gentis Rhodius subiectae summa
paupertas initio artisque summa intentio et ideo

¹ opera B pictura vell lac Mayhoff

² lacte B flacte B¹ facta vell e lacte Mayhoff emortuae
(aut emortua) pro lacte con Warmington

³ propter fratris amorem supra post voce transp Urlichs,
infra post Ariadnen Dilthey

⁴ artamenen B arianen cd Par Lat 6797 Artomenen
Dilthey

^a There appears to be something lost here

^b After he had sacked Thebes in 335 B C

^c It would be one of Alexander's great battles with Darius

^d Byblis perhaps, who died of love for her brother Caunus

being, what the Greeks term *ēthē*, and also the emotions, he was a little too hard in his colours. His works include ^a on the capture of a town, showing an infant creeping to the breast of its mother who is dying of a wound, it is felt that the mother is aware of the child and is afraid that as her milk is exhausted by death it may suck blood, this picture had been removed by Alexander the Great ^b to his native place, Pella. The same artist painted a Battle ^c with the Persians, a panel that contains a hundred human figures, which he painted with to Mnason the Tyrant of Elatea on the terms of ten minae per man. He also painted a Four-horse Chariots Racing, a Suppliant, who almost appeared to speak, Huntsmen with Quarry, Leontion Epicurus's mistress, and Woman ^d At Rest through Love of her Brother, and likewise the Dionysus and the Ariadne once on view in the Temple of Ceres at Rome, and the Tragic Actor and Boy in the Temple of Apollo, a picture of which the beauty has perished owing to the lack of skill of a painter commissioned by Marcus Junius as praetor to clean it in readiness for the festival of the Games of Apollo. There has also been on view in the Temple of Faith in the Capitol his picture of an Old Man with a Lyre giving lessons to a Boy. He also painted a Sick Man which has received unlimited praise, and he was so able an artist that King Attalus is said to have bought a single picture of his for a hundred talents.

Protogenes also flourished at the same time, as has *Protogenes* been said. He was born at Caunus, in a community § 81 that was under the dominion of Rhodes. At the outset he was extremely poor, and extremely devoted to his art and consequently not very productive.

- minor fertilitas quis eum docuerit, non putant constare, quidam et naues pinxisse usque ad quinquagensimum annum, argumentum esse, quod cum Athenis celeberrimo loco Minervae delubri propylon pingeret, ubi fecit nobilem Paralum et Hammoniada, quam quidam Nausicaan vocant, adiecerit parvolas naves longas in us, quae pictiores paergia appellant, ut appareret, a quibus initus ad arcem ostentationis ¹ opcia sua pervenissent palmam habet tabularum eius Ialysus, qui est Romae dicatus in templo Pacis cum pingeret eum, traditur madidis lupinis visse, quoniam ² sic ³ simul et famem sustineret ⁴ et sitim nec sensus nimia dulcedine obstrueret ⁵ huic picturae quater colorem induxit ceu tria subsidia iniuriae et vetustatis, ut decedente ⁶ superiore inferiori succederet est in ea cum mire factus, ut quem pariter ars et casus ⁷ pinxit non iudicabat se in eo exprimere spumam anhelantis, cum in reliqua parte omni, quod difficillimum erat, sibi ipse satisfacisset displicebat autem ais ipsa nec minui poterat et videbatur nimia ac longius a veritate discedere, spumaque pingi, non ex ore nasci anxio animi cruciatus, cum in pictura verum esse, non verisimile vellet, abstergeret saepius mutaveratque

¹ artis ostentationem *Rochette*

² quo *Traube*

³ sic add *Mayhoff*

⁴ sustinerent *edd vett*

⁵ obstrueret *B, cl Par 6801*

obstruerent *rell*

⁶ decedente *B recte ?*

⁷ ars et casus *Weil* casus et ars *edd vett* et casus *B*
casus *rell*

^a Patron heroes of sacred Athenian triremes used in state services The Hammonias replaced the older ship Salaminia

^b Incidental details of any sort

^c With reference perhaps to the Acropolis or stronghold (arx) of Athens ^d Mythical founder of Ialysus in Rhodes

Who his teacher was is believed to be unrecorded. Some people say that until the age of fifty he was also a ship-painter, and that this is proved by the fact that when he was decorating with paintings, on a very famous site at Athens, the gateway of the Temple of Athene, where he depicted his famous Paralus and Hammonias,^a which is by some people called the Nausicaa, he added some small drawings of battleships in what painters call the 'side-pieces,'^b in order to show from what commencement his work had arrived at the pinnacle^c of glorious display. Among his pictures the palm is held by his Ialysus,^d which is consecrated in the Temple of Peace in Rome. It is said that while painting this he lived on soaked lupins, because he thus at the same time both sustained his hunger and thirst and avoided blunting his sensibilities by too luxurious a diet. For this picture he used four coats of paint, to serve as three protections against injury and old age, so that when the upper coat disappeared the one below it would take its place. In the picture there is a dog marvelously executed, so as to appear to have been painted by art and good fortune jointly. The artist's own opinion was that he did not fully show in it the foam of the panting dog, although in all the remaining details he had satisfied himself, which was very difficult. But the actual art displayed displeased him, nor was he able to diminish it, and he thought it was excessive and departed too far from reality—the foam appeared to be painted, not to be the natural product of the animal's mouth, vexed and tormented, as he wanted his picture to contain the truth and not merely a near-truth, he had several times rubbed off the paint and used another

penicillum, nullo modo sibi adprobans postremo iratus arti, quod intellegéretur, sponcam inpegit in viso loco tabulae et illa reposuit ablitos colores qualiter cura optaverat, fecitque in pictura fortuna naturam

- 104 Hoc exemplo eius similis et Nealcen successus spumae equi similiter spongea impacta secutus dicitur, cum¹ pingeret² poppy/ontæ retinentem eum³ ita Protogenes monstravit et fortunam⁴

- Propter hunc Ialysum, ne cremaret tabulam, Demetrius rex, cum ab ea parte sola posset Rhodum capere, non incendit, parcentemque picturae fugit
105 occasio victoriae erat tunc Protogenes in suburbano suo hortulo, hoc est Demetrii castris,⁵ neque interpellatus proelis incohata opera intermisit omnino nisi accitus a rege, interrogatusque, qua fiducia extra muros agebat, respondit scire se cum Rhodis illi bellum esse, non cum artibus disposuit rex in tutelam eius stationes, gaudens quod manus servaret, quibus pepercit, et, ne saepius advocaret, ultro ad eum venit hostis relictisque victoriae suae

¹ I l dicuntur cum (disceret B) dum celestem Traube pingitur B² pingatur B¹ pingit ac Traube

³ I l retinet pane cum varia temptant edd

⁴ ita fortunam transp vult Warrington supra post naturam § 103 idem conr ita <et iram>

⁵ hoc castris delendum? (Ulrichs)

^a See § 102, p 337

brush, quite unable to satisfy himself. Finally he fell into a rage with his art because it was perceptible, and dashed a sponge against the place in the picture that offended him, and the sponge restored the colours he had removed, in the way that his anxiety had wished them to appear, and chance produced the effect of nature in the picture!

It is said that Nealces also following this example of his achieved a similar success in representing a horse's foam by dashing a sponge on the picture in a similar manner, in a representation of a man clucking in his cheek to soothe a horse he was holding. Thus did Protogenes indicate the possibilities of a stroke of luck also.

It was on account of this Ialysus^a that King Demetrius, in order to avoid burning a picture, abstained from setting fire to Rhodes when the city could only be taken from the side where the picture was stored, and through consideration for the safety of a picture lost the chance of a victory! Protogenes at the time was in his little garden on the outskirts of the city, that is in the middle of the 'Camp of Demetrius,' and would not be interrupted by the battles going on, or on any account suspend the works he had begun, had he not been summoned by the King, who asked him what gave him the assurance to continue outside the walls. He replied that he knew the King was waging war with the Rhodians, not with the arts. The King, delighted to be able to safeguard the hands which he had spared, placed guardposts to protect him, and, to avoid repeatedly calling him from his work, actually though an enemy came to pay him visits, and quitting his aspirations for his own victory, in the thick of battles and the

*Protogenes
and King
Demetrius*
305-4 B.C.

votis inter arma et murorum ictus spectavit artificem, sequituique tabulam illius temporis hac fama, quod eam Protogenes sub gladio pinxerit

- 106 Satyrus hic est, quem anapauomenon vocant, ne quid desit temporis eius securitati, tenentem tibus

Fecit et Cydippen et Tlepoleum, Philiscum tragoediarum scriptorem meditantem, et athletam¹ et Antigonum regem, matrem Aristotelis philosophi, qui ei suadebat, ut Alexandri Magni opera pingeret propter aeternitatem rerum, impetus animi et quaedam artis libido in haec potius eum tulere, novissime pinxit Alexandrum² ac Pana fecit et signa ex aere, ut diximus

- 107 Eadem aetate fuit Asclepiodorus, quem in symmetria mirabatur Apelles huic Mnaso tyrannus pro duodecim drs dedit in singulos mnas tricenae, idemque Theomnesto in singulos heroas vicens

- 108 His adnumerari debet et Nicomachus, Aristidis³ filius ac discipulus pinxit iactum Proserpinae, quae tabula fuit in Capitolio in Minervae delubrio supra aediculam Iuventutis, et in eodem Capitolio, quam Plancus imperatori posuerat, Victoria quadrigam in sublime rapiens Ulvi primus addidit pilleum

- 109 pinxit et Apollinem ac Dianam, deumque matrem in leone sedentem, item nobiles Bacchas obrep-

¹ Alcetam Gronov

² Alexandream Frohner

³ Aristidis Mayhoff coll 111, 122 Aristidi Ulrichs Aristidae illius Oemichen Aristiae Sillig aristiae B ariste(1) cheimi rell

^a Phaestis or Phrestias

^b The elder, cf § 75 and note on pp 410 and 411

^c Before the fire of A D 64

^d Munatius, who triumphed in 43 B C

^e Cybele

battering down of walls, looked on at the work of an artist. And even to this day the story is attached to a picture of that date that Protogenes painted it with a sword hanging over him. The picture is the one of a Satyr, called the Satyr Reposing, and to give a final touch to the sense of security felt at the time, the figure holds a pan of flutes.

Other works of Protogenes were a Cydippe, a Tlepolemus, a Philiscus the Tragic Poet in Meditation, an Athlete, a portrait of King Antigonus, and one of the Mother^a of Aristotle the philosopher. Aristotle used to advise the artist to paint the achievements of Alexander the Great, as belonging to history for all time. The impulse of his mind however and a certain artistic capriciousness led him rather to the subjects mentioned. His latest works were pictures of Alexander and of Pan. He also made bronze statues, as we have said.

XXXIV

In the same period there was also Asclepiodorus, who was admired by Apelles for his proportions. For a picture of the Twelve Gods the tyrant Mnaso paid him three hundred minae per god. The same patron paid Theomnestus twenty minae for each of the heroes in a picture.

Asclepiodorus

To the list of these artists must also be added Nicomachus son and pupil of Aristides^b. He painted a Rape of Persephone, a picture formerly^c in the Shrine of Minerva on the Capitol, just above the Chapel of Youth, and there was also in the Capitol, where it was placed by General Plancus,^d his Victory hurrying her Chariot aloft. He was the first painter who represented Odysseus wearing a felt skull-cap. He also painted an Apollo and Artemis, and the Mother^e of the Gods seated on a Lion, and likewise

Nicomachus and others

- tantibus Satyris, Scyllamque, quae nunc est Romae in templo Pacis nec fuit alius in ea arte velocior tradunt namque conduxisse pingendum ab Aristiatio Sicyoniorum tyranno, quod is faciebat Telesti poetice monumentum praefinito die, intra quem perageretur, nec multo ante venisse, tyranno in poenam accenso, paucisque diebus absolvisse et celeritate et arte
- 110 *mna* Discipulos habuit Aristonem fratrem et Aristiden¹ filium et Philoxenum Ephetium, cuius tabula nullis postferenda, Cassandro regi picta continuit Alexandri proelium cum Dario idem pinxit et lasciviam, in qua tres Sileni commissantur hic celeritatem praeceptoris secutus breviores etiamnum quasdam picturae compendiaras invenit
- 111 Adnumeratur his et Nicophanes, elegans ac concinnus ita, ut venustate ei pauci comparentur, cothurnus et gravitas artis multum a Zeuxide et Apelle abest Apellis discipulus Perseus, ad quem de hac arte scripsit, huius fuerat aetatis Aristidis Thebani discipuli fuerunt et filii Niceos et Ariston cuius est Satyrus cum scypho coronatus, discipuli Antoides² et Euphianor, de quo mox dicemus
- 112 XXXVII Namque subterit par est minoris picturae celebres in penicillo, e quibus fuit Piraicus³

¹ I I Aristoclem

² Antenorides *Letronne*

³ Piraicus *Ian* pirasicus *B* praecus aut preicus *vell* (peritus *cd Par* 6801)

^a The younger Cf §98 and note on pp 410-411

^b King of Macedonia 306-297 B C

^c The younger confused with the elder, §§ 75, 98, 108

^d Really pupils of the elder Aristides

^e Really pupils of the elder Aristides

a fine picture of Bacchants with Satyrs plowing towards them, and a Scylla that is now in the Temple of Peace in Rome. No other painter was ever a more rapid worker. Indeed it is recorded that he accepted a commission from the tyrant of Sicily Aristiatus to paint by a given date a monument that he was erecting to the poet Telestes, and that he only arrived not long before the date, the wrathful tyrant threatened to punish him, but in a few days he finished the work with a speed and an artistic skill that were both remarkable. Among his pupils were his brother Ariston and his son Aristides,^a and Philoxenus of Eretria, who painted for King Cassander^b a picture that holds the highest rank, containing a battle between Alexander and Darius. He also painted a picture with a wanton subject showing three Sileni at their revels. Imitating the rapidity of his master he introduced some shorthand methods of painting, executed with still more rapidity of technique.

With these artists is also reckoned Nicophanes, an elegant and finished painter with whom few can be compared for gracefulness, but who for tragic feeling and weight of style is far from Zeuxis and Apelles. Peiseus, the pupil to whom Apelles dedicated his volumes on the art of painting, had belonged to the same period. Aristides^c of Thebes also had as his pupils his sons Niceros and Ariston,^d the latter the painter of a Satyr Crowned with a Wreath and Holding a Goblet, and other pupils of Aristides were Antorides and Euphianor^e, about the latter we shall speak later on.

XXXVII For it is proper to append the artists famous with the brush in a minor style of painting

§ 128

Piræic and other

- ante paucis postferendus, proposito nescio an distin-
 xerit¹ se, quoniam humilia quidem secutus
 humilitatis tamen summam adeptus est gloriam
 tonstrinas sutrinisque pinxit et asellos et obsonia
 ac similia, ob haec cognominatus ihyuogiaphos,
 in iis consummatae voluptatis, quippe eae plures
 113 venire quam maximae multorum e diverso
 Maeniana, inquit Varro, omnia operiebat Serapionis
 tabula sub Veteribus hic scaenas optime pinxit,
 sed hominem pingere non potuit contra Dionysius
 nihil aliud quam homines pinxit, ob id anthropo-
 114 graphos cognominatus parva et Calicles fecit, item
 Calates comicis tabellis utraque Antiphilus namque
 et Hesionam nobilem pinxit et Alexandrum ac
 Philippum cum Minerva, qui sunt in schola^a in
 Octaviae porticibus, et in Philippi Liberum patrem,
 Alexandrum puerum, Hippolytum lauro emisso
 expavescentem, in Pompeia vero Cadmum et
 Europen idem iocoso² nomine Gyllum dendiculi
 habitus pinxit, unde id genus picturae gylli vo-
 cantur ipse in Aegypto natus didicit a Ctesidemo

¹ distinxerit *Mayhoff* distinxerit *Frohner* destruxerit
 aut destruxerit ² iocoso *edd. vet.* iocosis aut locosis

^a Balconies on houses in Rome first built by one Maenius
^b Large and small pictures

Among these was Pnaicus, to be ranked below few painters in skill, it is possible that he won distinction by his choice of subjects, inasmuch as although adopting a humble line he attained in that field the height of glory. He painted barbers' shops and cobblers' stalls, asses, viands and the like, consequently receiving a Greek name meaning 'painter of sordid subjects', in these however he gives exquisite pleasure, and indeed they fetched bigger prices than the largest works of many masters. On the other hand 'a picture by Serapio,' says Vairo, 'covered the whole of the Maenian Balconies^a at the place Beneath the Old Shops'. Serapio was a most successful scene-painter, but he could not paint a human being. On the contrary, Dionysius painted nothing else but people, and consequently has a Greek name meaning 'Painter of Human Beings'. Calicles also made small pictures, and so did Calates of subjects taken from comedy. Both classes^b were painted by Antiphilus, who executed the famous picture of Hesione and an Alexander and a Philip^c with Athene which are now in the school in Octavia's Porticoes, and in Philppus'^d Portico a Father Liber or Dionysus, a Young Alexander, a Hippolytus alarmed by the Bull rushing upon him, and in Pompey's Portico a Cadmus and Europa. He also painted a figure in an absurd costume known by the joking name of Gyllus, the name consequently applied to every picture of that sort. He was himself born in Egypt and a pupil of Ctesidemus.

^c King of Macedon, father of Alexander

^d Of L. Marcus Philppus, built in 29 B.C., Octavia's were built after 27 B.C., Pompey's (see below) in 55 B.C.

- 115 Decet non sleri et Aideatis templi pictorem
praesertim civitate donatum ibi et carmine,¹ quod
est in ipsa pictura his versibus

Dignis dignu'² loco³ picturis condecoravit
reginae Iunonis supremi coniugis templum
Plautius Marcus⁴, cluet Asia lata⁵ esse oriundus,
quem nunc et post semper ob attem hanc Aidea
laudat,

- 116 eaque sunt scripta antiquis litteris Latinis non
fraudando⁶ et S Tadio⁷ divi Augusti aetate, qui
primus instituit amoenissimam parietum picturam,
villas et porticus⁸ ac topiaria opera, lucos, nemora,
colles, piscinas, eumpos, amnes, litora, qualia quis
optaret, varias ibi obambulantium species aut navi-
gantium terraeque villas adeuntium asellis aut
vehiculis, iam piscines, aucupantes aut venantes
117 aut etiam vindemiantes sunt in eius exemplaribus
nobiles palustri⁹ accessu¹⁰ villae, succollatis¹¹ spon-
sione¹² mulieribus labantes trepidis quae¹³ feruntur,
plurimae praeterea tales argutae facetissimi salis

¹ carmen *Schneidewin*

dignu' *Hermolaus Barbarus* digna

³ fortasse *Lyco* fortasse dignu' loco dignis picturis vel dignis
digna loco picturis

⁴ plautius marcus *B* mareus plautis marcus *rell*

⁵ cluet Asia lata *Bergk* Cleotas Alalia *Sillig* cluetas
alata *B* cloet (do et cd *Flor Ricc*) asia lata *rell*

⁶ fraudanda *Mayhoff*

⁷ S Tadio *Urlichs*, Ian studio *B* ludio *rell*

⁸ porticus cd *Par Lat* 6797, ut videtur portus *rell*

⁹ palustri *B* paulstri *rell* plaustri *edd vet*

¹⁰ accessu *B* ac censu *rell*

¹¹ succollatis *cll* (suae collatis *B*) subcollantium *Hermo*
laus Barbarus

¹² specie *Hermolaus Barbarus*

¹³ trepidis quae *B*, cd *Leid Voss* trepidisque *rell*

It is proper also not to pass over the painter of the temple at Ardea, especially as he was granted the citizenship of that place and honoured with an inscription on the picture, consisting in the following verses

*Italian
painters
Plautius*

One Marcus Plautius, a worthy man,
Adorned, with paintings worthy of this place,^a
The shine of Juno, Queen of Spouse supreme,
This Marcus Plautius, as men know, was born
In Asia wide Now, and hereafter always,
Ardea applauds him for this work of art

These lines are written in the antique Latin script Nor must Spurius Tadius^b also, of the period of his late lamented Majesty Augustus, be cheated of his due, who first introduced the most attractive fashion of painting walls with pictures of country houses and porticoes and landscape gardens, groves, woods, hills, fish-ponds, canals, rivers, coasts, and whatever anybody could desire, together with various sketches of people going for a stroll or sailing in a boat or on land going to country houses riding on asses or in carriages, and also people fishing and fowling or hunting or even gathering the vintage His works include splendid villas approached by roads across marshes,^c men tottering and staggering along carrying women on their shoulders for a bargain, and a number of humorous drawings of that sort besides, extremely wittily designed He

Tadius

*Before
A D 37*

^a But perhaps the right reading is *Dignus digna Lyco*
'To the worthy, worthy reward, Lycon adorned' I e
the artist was M. Plautius Lycon, keeping his Greek name when he received a new one on becoming a citizen at Ardea

^b Or Studius or Ludius The reading is uncertain

^c Or 'well known among his works are men approaching a country house across marshes' The Latin text of much of this sentence is uncertain

idem subdialibus maritimas urbes pingere instituit, blandissimo aspectu minimoque incendio

118 Sed nulla gloria artificum est nisi qui tabulas pinxere eo venerabili antiquitatis prudentia apparet non enim parietes excolebant dominis tantum nec domos uno in loco mansuias, quae ex incendius rapi non possent casa Ptoogenes contentus erat in hortulo suo, nulla in Apellis tectoriis pictura erat nondum libebat parietes totos tingere, omnium eorum ais urbibus excubabat, pictoque res communis terrarum erat

119 Fuit et Aiellius Romae celeberrimo pulo ante divum Augustum, in flagitio insigni corrupisset artem, semper ei lenocinans feminae, cuius¹ amore flagraret, et² ob id deas pingens, sed dilectum imagine

120 itaque in pictura eius scorta numerabantur fuit et nuper gravis ac severus idemque floridis tumidus³ pictor Famulus⁴ huius erat Minerva spectantem spectans, quacumque aspiceretur paucis diebus huius pingebat, id quoque cum gravitate, quod semper togatus, quamquam in machinis carceris eius artis domus aurea fuit, et ideo non extant exempla alia magnopere post eum fuisse in auctoritate Cornelius Pinus et Attius Pius, qui Honoris

¹ feminae cuius *Mayhoff* cuius feminae

² flagraret et *Urlichs* flagrans esset *con* *Sillig* flagrans et

³ floridis tumidus *con* *Ian* floridis (floridus *B*²) umidus *B* floridus humilis *cd* *Par* *Lat* 6797 *f* *h* rei *cd* *Par* 6801 *f* humidus *cd* *Flor* *Ricc* *f* umidis *rell* floridus et vividus *Traube* floridus *Sillig* floridissimus *Urlichs* floridis multus *vel* *f* nitidus *vel* invictus *con* *Mayhoff* *S* Umidus *Frohner*

⁴ Famulus *cdd* famulus *Frohner* Fabullus *ed* *princ*

^a *I e* canvases or panels, not wall paintings ^b Nero's palace

also introduced using pictures of seaside cities to decorate uncovered terraces, giving a most pleasing effect and at a very small expense

But among artists great fame has been confined to painters of pictures only,^a a fact which shows the wisdom of early times to be the more worthy of respect, for they did not decorate walls, merely for owners of property, or houses, which would remain in one place and which could not be rescued from a fire. Protogenes was content with a cottage in his little garden, Apelles had no wall-frescoes in his house, it was not yet the fashion to colour the whole of the walls. With all these artists then art was on the alert for the benefit of cities, and a painter was the common property of the world.

A little before the period of his late lamented *Arellius* Majesty Augustus, Arellius also was in high esteem at Rome, ~~had~~ he not prostituted his art by a notorious outrage, by always paying court to any woman he happened to fall in love with, and consequently painting goddesses, but in the likeness of his mistresses, and so his pictures included a number of portraits of harlots. Another recent painter was *Famulus* Famulus, a dignified and severe but also very florid artist, to him belonged a Minerva who faced the spectator at whatever angle she was looked at. Famulus used to spend only a few hours a day in painting, and also took his work very seriously, as he always wore a toga, even when in the midst of his easels. The Golden House^b was the prison that contained his productions, and this is why other examples of his work are not extant to any considerable extent. After him in esteem were Cornelius Pinus and Attius Priscus, who painted

PLINY NATURAL HISTORY

Virtutis aedes Imperatori Vespasiano Augusto restituenti pinxerunt, Priscus antiquis similior

121 XXXVIII Non est omittenda in picturae mentione celebris circa Lepidum fabula, siquidem in triumviratu quodam loco deductus a magistratibus in nemorosum hospitium minaciter cum eis postero die expostulavit somnum ademptum sibi volucrum concentu, at illi diaconem in longissima membiana depictum circumdedere luco, eoque terrore aves tunc siluisse narrantur et postea posse compesci

122 XXXIX Ceris pingere ac picturam inurere quis primus excogitaverit, non constat quidam Aristidis inventum putant, postea consummatum a Piatitele, sed aliquanto vetustiores encaustae picturae existere, ut Polygnoti et Nicanoris, Mnesilai¹ Parriorum Elasippus² quoque Aeginae picturae suae inscripsit ἐνέκαεν, quod profecto non fecisset nisi encaustica inventa

123 XL Pamphilus quoque, Apellis praeceptor, non pinxisse solum encausta, sed etiam docuisse traditur Pausian Sicyonium, primum in hoc genere nobilem Bityetis filius hic fuit eiusdemque primo discipulus pinxit et ipse penicillo parietes Thespis, cum reficerentur quondam a Polygnoto picti,

¹ Mnesilai *Mayhoff* mens im *B* ae aut e manesilai *rell*
ac Mnasilai *Dellefsen* et Archesilai *Hermolaus Barbarus* (et
arcesilai *cd Par* 6801 *ut videtur*)

² Elasippus *Schneiderum* elasippus *B* lassippus *rell*
Lysippus edd vett

^a With Octavian and Antony, formed in 43 B C

^b Apparently the elder, cf § 75

the temples of Honour and Virtue for the Emperor Vespasian's restoration of them, Priscus was nearer in style to the artists of old days

XXXVIII In speaking of painting one must not omit the famous story about Lepidus. During his Triumvirate,^a when entertained by the magistrates of a certain place, he was given lodging in a house buried in trees, and the next day he complained to them in threatening language that he had been robbed of sleep by the singing of the birds, however the authorities had a picture of a large snake made on an extremely long strip of parchment and fixed it up round the wood, and the story goes that this at once frightened the birds into silence, and that subsequently it was possible to keep them in check.

XXXIX It is not agreed who was the inventor of painting in wax and of designs in encaustic. Some people think it was a discovery of Aristides,^b subsequently brought to perfection by Praxiteles, but there were encaustic paintings in existence at a considerably earlier date, for instance those of Polygnotus, and Nicanoir and Mnasilas of Paros. Also Elaspippus of Aegina has inscribed on a picture *enkaen* ('burnt in'), which he would not have done if the art of encaustic painting had not been invented.

XL It is recorded also that Pamphilus, the teacher of Apelles, not only painted in encaustic but also taught it to Pausias of Sicyon, the first artist who became famous in this style. Pausias was the son of Bryetes, and started as his father's pupil. He himself also did some wall-painting with the brush at Thespiae, when some old paintings by Polygnotus were being restored, and he was deemed to come

*Painting in
wax en
caustic*

Pausias

PLINY NATURAL HISTORY

- multumque comparatione superatus existimabatur,
 124 quoniam non suo genere certasset idem et lacu-
 naria prius pingere instituit, nec cymarias ante eum
 taliter adornari mos fuit, parvas pingebat tabellas
 maximeque pueros hoc aemuli interpretabantur
 facere eum, quoniam tarda picturae ratio esset illi
 quum ob rem daturus ei celebritatis famam absolvit
 uno die tabellam quae vocata est hemeresios, puero
 125 picto imavit in iuventa Glyceiam municipem suam,
 inventricem coronarum, certandoque imitatione eius
 ad numerosissimam florum varietatem perduxit
 artem illam postremo pinxit et¹ ipsam sedentem
 cum corona, quae e nobilissimis tabula est, appellata
 stephanoplocos, ab alius stephanopolis, quoniam
 Glyceia venditando coronas sustentaverat pauper-
 tatem huius tabulae exemplar, quod apographon
 vocant, L Lucullus duobus talentis emit²
 126 Dionysius³ Athenis Pausias autem fecit et grandes
 tabulas, sicut spectatam in Pompei porticu boum
 immolationem eam prius invenit picturam, quam
 postea imitati sunt multi, aequavit nemo ante
 omnia, cum longitudinem bovis ostendi vellet,
 adversum eum pinxit, non transversum, et abunde

¹ et B om vell

² lac Mayhoff

³ Dionysius Pintrianus a Dionysio edd vet

^a There is no proof that perspective is meant, but somehow Pausias gave the figure due relief

off very second best in comparison with the original artist, having entered into competition in what was not really his line. Pausias also first introduced the painting of panelled ceilings, and it was not customary before him to decorate arched roofs in this way. He used to paint miniatures, and especially children. His rivals explained this practice as being due to the slow pace of his work in painting, and consequently to give his work also the reputation of speed he finished a picture in a single day, a picture of a boy which was called in Greek Hemeresios, meaning One-day Boy. In his youth he fell in love with a fellow-townswoman named Glycera, who invented chaplets of flowers, and by imitating her in rivalry he advanced the art of encaustic painting so as to reproduce an extremely numerous variety of flowers. Finally he painted a portrait of the woman herself, seated and wearing a wreath, which is one of the very finest of pictures, it is called in Greek Stephanoplocos, Girl making Wreaths, or by others Stephanopōlis, Girl selling Wreaths, because Glycera had supported her poverty by that trade. A copy (in Greek *apographōn*) of this picture was bought by Lucius Lucullus at Athens for two talents, (it had been made by) 88-7 B.C. Dionysius at Athens. But Pausias also did large pictures, for instance the Sacrifice of Oxen which formerly was to be seen in Pompey's Portico. He first invented a method of painting which has afterwards been copied by many people but equalled by no one, the chief point was that although he wanted to show the long body of an ox he painted the animal facing the spectator and not standing sideways, and its great size is fully conveyed.^a

PLINY NATURAL HISTORY

- 127 intellegitui amplitudo dem, cum omnes, quae volunt eminentia videri, candicanti faciant colore, quae condunt, nigro, hic totum bovem atque coloris fecit umbraeque corpus ex ipsa¹ dedit, magna proisus aite in aequo extantia ostendente et in confiecto solida omnia Sicyone et hic vitam egit, diuque illa fuit patria picturae tabulas inde e publico omnes propter aes alienum civitatis addictas Scauri aedilitas Romam transtulit
- 128 Post eum eminuit longe ante omnes Euphranor Isthmius olympiade ciiii, idem qui inter fictores dictus est nobis fecit et colossos et marmorea et typos² scalpsit, docilis ac laboriosus ante omnes et in quocumque genere excellens ac sibi aequalis hic primus videtur expressisse dignitates heroum et usurpasse symmetrian, sed fuit in universitate corporum exilior et capitibus articulisque grandior
- 129 volumina quoque composuit de symmetria et coloribus opera eius sunt equestre proelium, vii dei, Theseus, in quod dixit eundem apud Parthasium rosa pastum esse, suum vero carne nobilis eius tabula Ephesi est, Ulives simulata insana bovem cum equo iungens et palliati cogitantes, dux gladium condens

¹ *Vl ipso*

² *scyphos cd Par 6801*

^a Pliny perhaps means that in spite of varying ('broken') tones of black, all the black looks solid

^b *I.e.* later than P But this is wrong Pliny's mistake has been traced to his confusion of the two artists named Aristides Cf §§ 75, 108, 111 and note on pp 410-11

^c Fingers and toes?

^d Which preceded the battle of Mantinea, 362 B C This

Next, whereas all painters ordinarily execute in light colour the parts they wish to appear prominent and in dark those they wish to keep less obvious, this artist has made the whole of a black colour and has given substance to the shadow from the shadow itself, with quite remarkable skill that shows the shapes standing out on a level surface and a uniform solidity on a broken ground ^a Pausias also passed his life at Sicyon, which was for a long period a native place of painting. But all the pictures there had to be sold to meet a debt of the community, and were removed from the ownership of the state to Rome by Scaurus as aedile

56 B C

After Pausias,^b Euphranor the Isthmian distinguished himself far before all others, in the 104th Olympiad, he has also appeared in our account of statues. His works included colossal statues, works in marble, and reliefs, as he was exceptionally studious and diligent, excelling in every field and never falling below his own level. This artist seems to have been the first fully to represent the lofty qualities of heroes, and to have achieved good proportions, but he was too slight in his structure of the whole body and too large in his heads and joints ^c He also wrote books about proportions and about colours. Works of his are a Cavalry Battle,^d the Twelve Gods, and a Theseus, in respect of which he said that Parrhasius's Theseus had lived on a diet of roses, but his was a beef-eater. There is a celebrated picture by him at Ephesus, Odysseus Feigning Madness and yoking an ox with a horse, with men in cloaks reflecting, and the leader sheathing his sword

Euphranor

364-361 B C

XXXIV, 50

and the next two pictures were both in the Stoa of Zeus Eleutherios at Athens. Paus I, 3, 3-4

PLINY NATURAL HISTORY

- 130 Eodem tempore fuisse Cydias,¹ cuius tabulam Aigonautas HS CXXXVIII Hortensius orator mercatus est eique aedem fecit in Tusculano suo Euphranoris autem discipulus Antidotus huius est clipeo dimicans Athenis et luctator tubicenque inter pauca laudatus ipse diligentior quam numerosior et in coloribus severius² maxime inclaruit discipulo Nicia Atheniense, qui diligentissime mulieres pinxit
- 131 lumen et umbras custodit atque ut eminerent e tabulis picturae³ maxime curavit Pompeium⁴ eius Nemea advecta ex Asia Romam a Silano, quam in curia divinus positam, item Liberi patris in aede Concordiae, Hyacinthus, quem Caesar Augustus delectatus eo secum deportavit Alexandria capta, et ob id Tiberius Caesar in templo eius dicavit hanc tabulam, et Danae,⁵ Ephesi vero est megabyzi, sacerdotis Ephesiae Dianae, sepulchrum, Athenis necyomantea Homerum hanc vendere Attalo regi noluit talentis LX potiusque patriae suae donavit abundans opibus fecit et grandes picturas, in quibus sunt Calypso et Io et Andromeda, Alexandei quoque in Pompei porticibus praececellens et Calypso sedens huic eidem⁶ adscribuntur

¹ Cydias *Detlefsen* et Cydias Cythnius *Urluchs, Bergk* cydi (*aut* cidi) et cydias (*aut* cidias)

² *I ll* severior ³ figurae con³ *Mayhoff*

⁴ operū (= operum) *Mayhoff* opera

⁵ danae // *cd Leid Voss v ll* danaen, danen, diana

⁶ eidem *Sillig, Schultz* quidem *edd veti* fidem

^a In the forum at Rome, built by Tiberius, A D 14

^b 'Place of prophecy of the dead,' *Odyssey* Bk XI

^c Attalus I of Pergamum, 241-197 B C But Plutarch is probably right in giving the king's name as Ptolemy I Soter, ruler of Egypt 323-284 B C

Contemporaries of Euphranor were Cydias, for *Cydias* whose picture of the Argonauts the orator Hortensius 114-50 B C paid 144,000 sesterces, and made a shrine for its reception at his villa at Tusculum Euphranor's pupil was Antidotus Works by the latter are a *Antidotus* Combatant with a Shield at Athens and a Wrestler and a Trumpeter which has been exceptionally praised Antidotus himself was more careful in his work than prolific, and severe in his use of colours, his chief distinction was being the teacher of the Athenian Nicias, who was an extremely careful *Nicias the younger* painter of female portraits Nicias kept a strict watch on light and shade, and took the greatest pains to make his paintings stand out from the panels Works of his are a Nemea, brought to Rome from 75 B C Asia by Silanus and deposited in the Senate-house as we have said, and also the Father Liber or Dionysus § 27 in the Shrine of Concord, a Hyacinthus with which Caesar Augustus was so delighted that when he took 30 B C Alexandria he brought it back with him—and consequently Tiberius Caesar dedicated this picture in the Temple ^a of Augustus—and a Danae, while at Ephesus there is the tomb of a megabyzus or priest of Diana of Ephesus, and at Athens there is a Necyomantea ^b of Homer The last the artist refused to sell to King Attalus ^c for 60 talents, and preferred to present it to his native place, as he was a wealthy man He also executed some large pictures, among them a Calypso, an Io ^d and an Andromeda, and also the very fine Alexander in Pompey's Porticoes and a Seated Calypso are assigned to him

^a One or two extant later paintings may be copies of this
^b Rumpf, *Journ Hellen St*, LXVII 21

- 133 Quadripedum¹ prosperime canes expressit hic est Nicias, de quo dicebat Pictiteles interrogatus, quae maxime opera sua probaret in maioribus quibus Nicias manum admovisset, tantum incrementum eius tribuebat non satis discernitur, alium eodem nomine an hunc eundem quidam faciant olympiade cxii
- 134 Niciae comparatur et aliquando praefertur Athenion Maronites, Glaucionis Cointii discipulus, austeriori colore et in austeritate iucundior, ut in ipsa pictura eruditio eluceat pinxit in templo Eleusine phylachum et Athenis frequentiam, quam vocaverit syngenicon, item Achillem virginis habitu occultatum Ulxē dependente et in una tabula vi signa,² quaque maxime inclaruit, agasonem cum equo quod nisi in iuventa obisset, nemo compararetur
- 135 Est nomen et Heraclidi Macedoni initio naves pinxit captoque Peiseo rege Athenas commigravit ubi eodem tempore erat Metrodorus, pictor idemque philosophus, in utraque scientia magnae auctoritatis itaque cum L. Paulus devicto Peiseo petisset ab Atheniensibus, ut si sibi quam probatissimum philosophum mitterent ad erudiendos liberos, item pictorem ad triumphum excolendum, Athenienses Metrodorum elegerunt, professi eundem in utroque desiderio praestantissimum, quod ita Paulus quoque

¹ quadripedum *Madrig* quadripedē (quadripedes *B*)
vi signa *Gronov* insigni *Duran* ut signa

^a It must be remembered that Greek marbles were painted

In drawings of animals he was most successful with dogs. It is this Nicias of whom Pракитеles used to say, when asked which of his own works in marble he placed highest, 'The ones to which Nicias has set his hand'—so much value did he assign to his colouring of surfaces.^a It is not quite clear whether it is another artist of the same name or this Nicias whom some people put in the 112th Olympiad.

Nicias the elder

332-329 B.C.

With Nicias is compared Athenion of Maronea, and sometimes to the disadvantage of the former. Athenion was a pupil of Glaucion of Corinth, he is more sombre in his colour than Nicias and yet therewithal more pleasing, so that his extensive knowledge shines out in his actual painting. He painted a Cavalry Captain in the temple at Eleusis and at Athens the group of figures which has been called the Family Group, and also an Achilles Disguised in Female Dress detected by Odysseus, a group of six figures in a single picture, and a Groom with a Horse, which has specially contributed to his fame. If he had not died in youth, there would have been nobody to compare with him.

Athenion

Heraclides of Macedon is also a painter of note. He began by painting ships, and after the capture of King Perseus he migrated to Athens, where at the same period was the painter Metrodorus, who was also a philosopher and a great authority in both fields. Accordingly when Lucius Paulus after conquering Perseus requested the Athenians to send him their most esteemed philosopher to educate his children, and also a painter to embellish his triumphal procession, the Athenians selected Metrodorus, stating that he was most distinguished in both of these requirements alike, as to which Paulus also

Heraclides

168 B.C.
Metrodorus

- 136 iudicavit Timomachus Byzantius Caesaris dictatoris aetate Aiace[m] et Mediam pinxit, ab eo in Veneris Genetricis aede positas, LXXX talentis venundatas talentum Atticum X $\bar{v}i^1$ taxat M Varro Timomachi aequ[e] laudantur Orestes, Iphigenia in Tauris et Lecythion, agilitatis exercitator, cognatio nobilium, palliati, quos dicturos pinxit, alterum stantem, alterum sedentem praecipue tamen ais ei fuisse in Gorgone visa est
- 137 Pausiae filius et discipulus Aristolaus^e e severissimis pictoribus fuit, cuius sunt Epaminondas, Pericles, Media, Virtus, Theseus, imago Atticae plebis, boum immolatio sunt quibus et Nicophanes, eiusdem Pausiae discipulus, placeat diligentia, quam intellegant soli artifices, alias durus in coloribus et sile multus nam Socrates iure omnibus placet, tales sunt eius cum Aesculapio filiae Hygia, Aegle,² Panacea, Iaso,³ et piger, qui appellatur Ocnos, spartum torquens, quod asellus adrodit
- 138 Hactenus indicatis proceribus in utroque genere non silebuntur et primis proximi Aristoclides, qui⁴ pinxit aedem Apollinis Delphis Antiphilus puero ignem conflante laudatur ac pulchra alias domo⁵

¹ $\bar{v}i$ Hardouin VI M B XVI vell

² Hygia, Aegle edd veti thygiaegle B hygiagle vell

³ Panacea, Iaso Hermolaus Barbarus panaca iasus B

p lacus cd Par Lat 6797 penaca lacus aut locus vell

⁴ qui delendum con Mayhoff

⁵ laudatur e pictura atra foculo con Mayhoff

^a Copies of this picture exist

^b Probably a mask of Medusa

^c Hence a Latin proverb *ocnus spartum torquens*, 'sloth twisting a rope' I.e. 'Labour in vain'

^d Both large and small pictures

held the same view Timomachus of Byzantium *Timomachus*
 in the period of Caesar's dictatorship^a painted an *46 B C*
 Ajax and a Medea, placed by Caesar in the temple
 of Venus Genetrix, having been bought at the price
 of 80 talents (Marcus Vairo rates the Attic talent
 at 6000 denarii) Equal praise is given to
 Timomachus's Orestes, his Iphigenia among the
 Tauri and his Gymnastic-Master Lecythion, also his
 Noble Family and his Two Men wearing the Pallum,
 whom he has represented as about to converse, one
 is a standing figure and the other seated It is in
 his painting of a Gorgon^b however that his art seems
 to have given him most success

Pausias's son and pupil Aristolaus was one of the *Aristolaus*
 painters of the very severe style, to him belong an
 Epaminondas, a Pericles, a Medea, a Virtue, a
 Theseus, a figure representing the Athenian People,
 and a Sacrifice of Oxen Some persons also admire
 Nicophanes, who was likewise a pupil of Pausias, *Nicophanes*
 for his careful accuracy which only artists can ap-
 preciate, though apart from that he is hard in his
 colouring and lavish in his use of ochre As for
 Sociates he is justly a universal favourite, popular *Socrates*
 pictures by him are his group of Asclepius with his
 daughters Health, Brightness, All-Heal and Remedy,
 and his Sluggard, bearing the Greek name of Ocnos,
 Laziness, and represented as twisting a rope of
 broom which an ass is nibbling^c

Having so far pointed out the chief painters in both
 branches,^d we will also mention those of the rank
 next to the first Aristoclides who decorated the *Aristoclides*
 Temple of Apollo at Delphi, Antiphilus who is *and others*
 praised for his Boy Blowing a Fire, and for the
 apartment, beautiful in itself, lit by the reflection

- splendescente ipsiusque pueri oie, item lanificio, in quo proferant omnium mulierum pensa, Ptolemaeo venante, sed nobilissimo Satyro cum pelle pantheina, quem aposcopeuonta appellant, Aristophon Ancaeo¹ vulnerato² ab apio cum socia dolonis Astypale³ numerosaque tabula, in qua sunt Priamus, Helena, Credulitas, Ulixes, Deiphobus, Dolus⁴
- 139 Andriobius pinxit Scyllum ancoras praecedentem Peisicae classis, Artemon Danaen mutantibus eam praedonibus, reginam Stratonice^{*} Herculem et Deiannam, nobilissimas autem, quae sunt in Octaviae operibus, Herculem ab Oeta monte Doidos exusta mortalitate consensu deorum in caelum euntem, Laomedontis circa Herculem et Nepetunum historiam, Alcimachus Dionippum, qui pancratio Olympiae citra pulveris⁵ iactum, quod vocant ἀκοντί, vicit, Coenus stemmata
- 140 Ctesilochus, Apellis discipulus, petulantis pictura innotuit, Iove Liberum parturiente depicto matro et muliebriter ingemescente inter obstetricia dearum, Cleon Cadmo, Ctesidemus Oechaliae expugnatione, Laodamia, Ctesicles⁶ reginae Stratonices iniuria nullo enim honore exceptus ab ea pinxit volu-

¹ Ancaeo *Gelen* Ancaeam *Detlefsen* ancaeu *B*¹ angau *B*² anchalū *rell*

² vulnerato *edd* *vett* muneratūmo *B* vulneratū *rell*

³ Astypalaea *Brunn* ⁴ Dolon *Caesarius*

⁵ pulveris *edd* *vett* pueris

⁶ Ctesicles *Ian* etesides *B* clesides *rell*

^a Αποσκοπεύων, shading his eyes with his hand (Athenaeus, XIV, 629 f) The gesture is a common one in satyrs on vases

^b At Artemisium, 480 B C

^c Probably S who was wife of Seleucus I Nicator, King of Nearer Asia 312-281 B C

^d Heracles saved Hesione from a monster sent by Posidon

from the fire and the light, thrown on the boy's face, and likewise for his Spinning-room, in which all the women are busily plying their tasks, and his Ptolemy Hunting, but, most famous of all, his Satyr with Leopard's Skin, called in Greek the Man Shading his Eyes^a Aristophan did an Ancaeus Wounded by the Boar, with Astypale sharing his grief, and a picture crowded with figures, among them Priam, Helen, Credulity, Odysseus, Deiphobus, Craft Androbius painted a Scyllus Cutting the Anchor-ropes of the Persian Fleet,^b Artemon a Danae admired by the Robbers, a Queen Stratonice,^c and a Heracles and Deianira, but the finest of all his works, now in Octavia's Buildings, are his Heracles Ascending to Heaven with the consent of the Gods after his mortal remains were burnt on Mount Oeta in Doris, and the story of Laomedon in the matter of Heracles and Posidon,^d Alcimachus painted Dioxippus, who won the All-round Bout at Olympia 'without raising any dust,'^e *akoniti* as the Greek word is Coenus painted pedigrees

Ctesilochus a pupil of Apelles became famous for a saucy burlesque painting which showed Zeus in labour^f with Dionysus, wearing a woman's nightcap and crying like a woman, while goddesses act as midwives, Cleon for his Cadmus, Ctesidemus for his Storming of Oechalia^g and his Laodamia Ctesicles won notoriety by the insult he offered to Queen Stratonice,^h because as she did not give him an honourable reception he painted a picture of her

to ravage the land of Troy after Hesione's father King Laomedon broke a promise

^a *I ē* without any difficulty

^f Dionysus was born from Zeus' thigh

^g By Heracles ^h See note c

- tantem cum piscatore, quem reginam amare sermo
 erat, eamque tabulam in portu Ephesi proposuit,
 ipse velis raptus regina tolli vetuit, utriusque
 similitudine mure expressa Cratinus comoedos¹
 Athenis in pompeo² pinxit, Eutyichides³ bigam
 141 regit⁴ Victoria Eudorus scaena spectatur—idem
 et ex aere signa fecit—, Hippys⁵ Neptuno et
 Victoria Habron Amicitiam⁶ et Concordiam pinxit
 et deorum simulacia, Leontiscus Ariatum victorem
 cum tropaeo, psaltriam, Leon Sappho, Nearchus
 Venerem inter Gratias et Cupidines, Herculem
 tristem insanae paenitentia, Nealces Venerem,
 142 ingeniosus et sollers,⁷ imo siquidem, cum proe-
 lum navale Persarum et Aegyptiorum pinxisset,
 quod in Nilo cuius est aqua maris similis⁸ factum
 volebat intellegi, argumento declaravit quod site
 non poterat asellum enim bibentem in litore
 143 pinxit et crocodilum insidiantem ei, Oenias
 syngenicon, Philiscus officinam pictoris ignem con-
 flante puero, Phalerion Scyllam, Simonides Agathar-
 chum et Mnemosynen, Simus iuvenem requiescen-

¹ comoedos *Caesarius* comoedus

² pompeo *Gelen* pompeio

³ Eutyichides *Hermolaus Barbarus* eutyichidis *cd Flor Ricc*
ut videtur euthycides *B* euclides *cd Par* 6801

⁴ regis *cd Par* 6801 regis cum *Gelen* quam regit *quid*
apud Dalecamp Eutyichides biga quam regit Victoria,
 Eudorus scaena spectatur *con Mayhoff*

⁵ Hippys *Keil* Hippias *Hardouin* Iphis *edd vett* hyppis
cl Par Lat 6797 hyppus *B* hypis *rell*

⁶ Amicitiam *edd vett* amicam

⁷ *lac Mayhoff*

⁸ cuius similis delenda esse putant *Urlichs, Mayhoff*

^a At the city gates, from it solemn processions started

^b I.e. apparently the river is so extensive that in the picture it might be mistaken for the sea

romping with a fisherman with whom gossip said she was in love, and put it on exhibition at Ephesus Harbour, himself making a hurried escape on ship-board. The Queen would not allow the picture to be removed, the likeness of the two figures being admirably expressed. Cratinus painted the Comic Actors in the Processional Building^a at Athens, Eutychides a Chariot and Pan driven by Victory, Eudorus is famous for a scene-painting—he also made bronze statues—and Hippys for his Posidon and his Victory. Habron painted a Friendship and a Harmony and figures of gods, Leontiscus an Arius with the Trophies of Victory, and a Harpist Girl, Leon a Sappho, Nearchus Aphrodite among the Graces and the Cupids, and a Heracles in Sorrow Repenting his Madness, Nealces an Aphrodite. This Nealces was a talented and clever artist, inasmuch as when he painted a picture of a naval battle between the Persians and the Egyptians, which he desired to be understood as taking place on the river Nile, the water of which resembles^b the sea, he suggested by inference what could not be shown by art. He painted an ass standing on the shore drinking, and a crocodile lying in wait for it.^c Oenias has done a Family Group, Philiscus a Painter's Studio with a boy blowing the fire, Phalerion a Scylla, Simonides an Agatharchus and a Mnemosyne, Simus a Young Man Reposing, a Fuller's Shop

^a But it is certain that the picture referred to a battle in the Persian Artaxerxes III Ochus' conquest of Egypt in 350 B.C. The Egyptians called him 'Ass' (with allusion to the ass shaped Seth Typhon who represented the wicked foe), and the likeness of *ὄνος* (ass) to *Ὀχός* (Ochus) became a joke amongst Greeks who fought on both sides.

tem, officinam fullonis quinquatius celebrantem,
 144 idemque Nemesim egiēgiam, Theorus¹ se inungentem,² idem ab Oieste matiem et Aegisthum interfici, bellumque Iliacum pluibus tabulis, quod est Romae in Philippi porticibus, et Cassandiam, quae est in Concordiae delubrio, Leontium Epicuri cogitantem, Demetrium regem, Theon Oiestis insaniam, Thamyriam citharoedum, Tauiscus discobolum, Clytaemestiam, Paniscon, Polynicen regnum repetentem et Capanea

145 Non omittetur inter hos insigne exemplum namque Eriogonus, tritoi colorum Nealcae pictoris, in tantum ipse profecit, ut celebriem etiam discipulum reliquerit Pasiam, fratrem Aeginetae pictoris³ illud vero perquam iustum ac memoria dignum est, suprema opera artificum imperfectasque tabulas, sicut Irim Aristidis, Tyndaridas Nicomachi Mediam Timomachi et quam diximus Venerem Apellis, in maiore admiratione esse quam perfecta, quippe in us linamenta reliqua ipsaeque cogitationes artificum spectantur, atque in lenocinio commendationis dolor est manus, cum id ageret, extinctae

146 Sunt etiamnum non ignobiles quidem in transcurso tamen dicendi Aristocydes, Anaxander, Aristobulus Syrus, Arcesilas⁴ Tisicratis filius, Coroebus⁵

¹ V l Theodorus

² se inungentem *Sillig, Ian* emungentem *B* et inungentem *aut et mungentem vell*

³ pictoris *Dellefsen* pictores *B* fictoris *aut fectores vell*

⁴ Arcesilaus *cd Par* 6801 *arcesillas B*

⁵ Coroebus *Keil* Corybas *edd vet* corbios *aut corbius aut cordius*

^a Celebrated for five days, March 19th–23rd, by persons whose trades were under Minerva's patronage The original doubtless depicted some festival of Athene

Celebrating the Quinquatrus,^a and also a Nemesis of great merit, Theorus a Man Anointing Himself, and also Orestes killing his Mother and Aegisthus, and the Trojan War in a series of pictures now in Philippus' Porticoes at Rome and a Cassandra, in the Shrine of Concord, a Leontion Epicurus's mistress in Contemplation, a King Demetrius, Theon a Madness of Orestes, a Thamyras the Harper, Tauriscus a Man throwing a Quoit a Clytaemnestra, a Young Pan, a Polynices Claiming the Sovereignty,^b and a Capaneus

Among these artists the following remarkable case is not to be left out, the man who ground the colours for the painter Nealces, Eugonus, attained such proficiency on his own account that he actually left behind him a famous pupil, Pasias, the brother of the painter Aeginetas. It is also a very unusual and memorable fact that the last works of artists and then unfinished pictures such as the Iris of Aristides,^c the Tyndarus' Children^d of Nicomachus, the Medea of Timomachus and the Aphrodite of Apelles which we have mentioned, are more admired § 92 than those which they finished, because in them are seen the preliminary drawings left visible and the artists' actual thoughts, and in the midst of approval's beguilement we feel regret that the artist's hand while engaged in the work was removed by death.

There are still some artists who are not undistinguished but who only need be mentioned in passing—Aristocydes, Alexander, Aristobulus of Syria, Aicesilas son of Tisicrates, Coroebus the pupil of

^b Of Thebes, against his brother Eteocles

^c See §§ 75, 98, 108, 111

^d These were Castor, Polydeuces (Pollux), Helen, and Clytaemnestra

Nicomachi discipulus, Charmantides¹ Euphianoris, Dionysodorus² Colophonius, Dicaeogenes,³ qui cum Demetrio rege vivit, Euthymides,⁴ Heracles Macedo, Milon Soleus,⁵ Pyromachi⁶ statuarii discipuli, Mnasitheus⁷ Sicyonius, Mnasitimus Aristonidae filius et discipulus, Nessus Habronis filius, Polemon Alexandrinus, Theodorus Samius et Stadius⁸ Nicosthenis discipuli, Xenon, Neochis discipulus, Sicyonius

- 147 Pinxere et mulieres Timarete, Miconis filia, Dianam, quae in tabula Ephesi est antiquissimae⁹ picturae, Ilene, Ciatini pictoris filia et discipula puellam, quae est Eleusine, Calypso, senem et praestigiatores Theodorum, Alcisthenem saltatorem, Aristarete, Nearchi filia et discipula, Aesculapium Iara¹⁰ Cyzicena, perpetua virgo, M. Varionis iuventa¹¹ Romae et penicillo pinxit et cestro in ebores imagines mulierum maxime et Neapoli anum in grandi tabula, 148 suam quoque imaginem ad speculum nec ullius velocior in pictura manus fuit, artis vero tantum, ut multum manipietus antecederet celeberrimos eadem aetate imaginum pictores Sopolim et Dionysium, quorum tabulae pinacothecas implent pinxit et

¹ Charmantides *Keil* charmanides *B* carmanides *rell*

² Dionysodorus *Keil* dionysiodorus

³ Dicaeogenes *Keil* dicaogenes (diogenes *cd Par* 6801)

⁴ euthymides *cd Par Lat* 6797, *ut videtur* euthymedes *cd Par* 6801 eutymides *B*

⁵ Soleus *Gelen* solaeus *B* solus *rell*

⁶ Philomachi *edd vett* ⁷ Mnesitheus *Hardouin*

⁸ stadius *cd Flor Ricc* statius *cd Lera Loss* stadios *rell Tadius edd vett*

⁹ antiquissimae *B* in antiquissimis *rell*

¹⁰ iara *B* lala *rell* Lala *Schneulewin* Maia *Frohner*

¹¹ inventa *Rochette*

Nicomachus, Chairmantides, the pupil of Euphranoi, Dionysodorus of Colophon, Dicaeogenes resident at the court of King Demetrius,^a Euthymides, the Macedonian Heracleides and Milon of Soli, pupils of Pyromachus, the sculptor of the human figure, Mnasitheus of Sicyon, Mnasitimus the son and pupil of Aristonides, Nessus son of Habron, Polemo of Alexandria, Theodorus of Samos and Stadias, both pupils of Nicosthenes, Xenon of Sicyon, pupil of Neocles

There have also been women artists—Timarete the daughter of Micon who painted the extremely archaic panel picture of Artemis at Ephesus, Irene daughter and pupil of the painter Ciatinus who did the Maiden at Eleusis, a Calypso,^b an Old Man and Theodorus the Juggler, and painted also Alcisthenes the Dancer, Aristarete the daughter and pupil of Nearchus, who painted an Asclepius. When Marcus Varro was a young man, Iulia of Cyzicus, who never married, painted pictures with the brush at Rome (and also drew with the *cestrum* or graver^c on ivory), chiefly portraits of women, as well as a large picture on wood of an Old Woman at Naples, and also a portrait of herself, done with a looking-glass. No one else had a quicker hand in painting, while her artistic skill was such that in the prices she obtained she far outdid the most celebrated portrait painters of the same period, Sopolis and Dionysius, whose pictures fill the galleries. A certain Olympias also painted, the

Women
artists

116-26 B C

^b Or, if Calypso is the name of a woman artist, 'Eleusis, Calypso, who painted an Old Man'

^c The *cestrum* was, it seems, a graver, spoon shaped at one end (for holding colours over heat), and with the handle end thickened or flattened out for levelling the colours

quaedam Olympias, de qua hoc solum memoratum,
discipulum eius fuisse Autóbulum

149 XLI Encausto pingendi duo fuere antiquitus
genera, cera et in ebore cestio, id est vericulo,¹
donec classes pingi coepere hoc tertium accessit
resolutis igni ceris penicillo utendi, quae pictura
navibus nec sole nec sale ventisve corrumpitur

150 XLII Pingunt et vestes in Aegypto, inter pauca
mirabili genere, candida vela, postquam attrivere,
inlinentes non coloribus, sed colorem sorbentibus
medicamentis hoc cum fecere, non apparet in
velis, sed in cortinam pigmenti ferventis mersa post
momentum extrahuntur picta minimeque, cum sit
unus in cortina color, ex illo alius atque alius fit in
veste accipientis medicamenti qualitate mutatus,
nec postea ablui potest ita cortina, non dubie
confusura colores, si pictos acciperet, digerit ex
uno pingitque, dum coquit, et adustae eae vestes
firmiores usibus fiunt quam si non urentur

151 XLIII De pictura satis superque contempsisse
his et plasticen conveniat eiusdem opere² terrae
figere ex argilla similitudines Butades Sicyonius

¹ vericulo *Sillig* viriculo *Verba* id est vericulo *fontasse*
delenda

² operae *B, cd Leid Voss m 2* opere *rell* operis *con*
Mayhoff

^a These words look like a gloss Pliny has already mentioned
the *cestrum* in § 147 The two kinds of encaustic painting
here mentioned are with wax and graver on wood, and with
wax and graver on ivory

^b Far back though it is, Pliny seems to refer to § 1 of this
book But the right reading is not certain

only fact recorded about her is that Autobulus was her pupil

XLI In early days there were two kinds of *Encaustic* encaustic painting, with wax and on ivory with a graver or *cestrum* (that is a small pointed graver ^a), but later the practice came in of decorating battle-ships. This added a third method, that of employing a brush, when wax has been melted by fire, this process of painting ships is not spoilt by the action of the sun nor by salt water or winds

XLII In Egypt they also colour cloth by an *Egyptian dyeing* exceptionally remarkable kind of process. They first thoroughly rub white fabrics and then smear them not with colours but with chemicals that absorb colour. When this has been done, the fabrics show no sign of the treatment, but after being plunged into a cauldron of boiling dye they are drawn out a moment later dyed. And the remarkable thing is that although the cauldron contains only one colour, it produces a series of different colours in the fabric, the hue changing with the quality of the chemical employed, and it cannot afterwards be washed out. Thus the cauldron which, if dyed fabrics were put into it, would undoubtedly blend the colours together, produces several colours out of one, and dyes the material in the process of being boiled, and the dress fabrics when submitted to heat become stronger for wear than they would be if not so heated

XLIII Enough and more than enough has now *Plastic art* been said about painting. It may be suitable to *Early stages* append to these remarks something about the *Butades and others* plastic art. It was through the service of that same earth ^b that modelling portraits from clay was

- figulus primus invenit Corinthi filiae opera, quae capta amore iuvenis, abeunte illo peregre, umbram ex facie eius ad lucernam in pariete lineis circumscripsit, quibus pater eius impressa aigilla typum fecit et cum ceteris fictilibus induratum igni proposuit, eumque servatum in Nymphaeo, donec
- 152 Mummius Corinthum everterit, tradunt sunt qui in Samo primos omnium plasticen invenisse Rhoecum et Theodorum tradant multo anteq̃ Bacchiadas Corintho pulsos, Damaratum vero ex eadem urbe profugum, qui in Etruria Tarquinius regem populi Romani genuit, comitatos fictoies Euchina, Diopum, Eugrammum, ab us Italiae traditam plasticen Butadis inventum est rubricam addere aut ex iuba creta fingere, primusque personas tegularum extremis imbricibus inposuit, quae inter initia prostypa vocavit, postea idem ectypa fecit hinc et fastigia templorum orta propter hunc plastae appellati
- 153 XLIV Hominis autem imaginem gypso e facie ipsa primus omnium expressit ceraque in eam formam gypsi infusa emendare instituit Lysistratus Sicyonius, frateri Lysippi, de quo diximus hic et similitudines¹ ieddeie instituit, ante eum quam

¹ similitudines *Sillag* similitudini *coni* *Mayhoff* similitudinis *B* similitudinem *rell*

^a Traditionally they invented the art of casting bronze, not of making casts in clay

^b Of these fictitious names *Euchair* means 'skilful handed' and *Eugrammus* 'skilled drawer' *Diopus* would be connected with *διопτρα*, an instrument for taking levels

^c In low relief

^d In high relief

first invented by Butades, a potter of Sicyon, at Corinth. He did this owing to his daughter, who was in love with a young man, and she, when he was going abroad, drew in outline on the wall the shadow of his face thrown by a lamp. Her father pressed clay on this and made a relief, which he hardened by exposure to fire with the rest of his pottery, and it is said that this likeness was preserved in the Shrine of the Nymphs until the destruction of Corinth by ^{146 B C} Mummius. Some authorities state that the plastic art was first invented by Rhoecus and Theodorus ^a at Samos, long before the expulsion of the Bacchiadae ^{581-580 B C} from Corinth, but that when Damaiatus, who in Etruria became the father of Tarquin king of the ^{trad 616-578 B C} Roman people, was banished from the same city, he was accompanied by the modellers Euchir, Diopus and Eugrammus,^b and they introduced modelling to Italy. The method of adding red earth to the material or else modelling out of red chalk, was an invention of Butades, and he first placed masks as fronts to the outer gutter-tiles on roofs, these at the first stage he called *prostypa*,^c but afterwards he likewise made *ectypa*.^d It was from these that the ornaments on the pediments of temples originated. Because of Butades modellers get their Greek name of *plastae*.

XLIV The first person who modelled a likeness in plaster of a human being from the living face itself, and established the method of pouring wax into this plaster mould and then making final corrections on the wax cast, was Lysistratus of Sicyon, the brother of Lysippus of whom we have spoken. ^{Lysistratus XXXIV, 61} Indeed he introduced the practice of giving likenesses, the object aimed at previously having been to

pulcherrimas facere studēbant idem et de signis effigies exprimere invenit, crevitque res in tantum, ut nulla signa statuave sine argilla fierent quo apparet antiquiorem hanc fuisse scientiam quam fundendi aeris

- 154 XLV Plastae laudatissimi fuerit Damophilus et Gorgasus, idem pictores, qui Cereris aedem Romae ad cucum maximum utroque genere artis suae excoluerant, versibus inscriptis Graece, quibus significarent ab dextra opera Damophili Esse, ab laeva¹ Gorgasi ante hanc aedem Tuscanica omnia in aedibus fuisse auctor est Varro, et ex hac, cum reficeretur, ciustas parietum excisas tabulis marginatis inclusas esse, item signa ex fastigiis dispersa
155 fecit et Chalcosthenes cruda opera Athenis, qui locus ab officina eius Ceramicos appellatur M Varro tradit sibi cognitum Romae Possim nomine, a quo facta poma et uvas ut non posses² aspectu discernere a veris³ idem magnificat Anacrisilaum, L Luculli familiarem, cuius proplasmata⁴ pluis venne solita artificibus ipsis quam aliorum
156 opera, ab hoc factam Venerem Genetricem in foro Caesaris et, priusquam absolveretur, festinatione

¹ ab laeva Gronov a parte laeva cd Par 6801 ab imia B apiane aut apione rell

² ut non posses Hardoun (u n possis Gronov) nemo posset Mayhoff non possis Ian ita ut non sit Gelen alitem nescisse Traube item pisces B item piscis rell (piscis cd Par Lat 6797) item pisces quos cd Poll

³ veris vix posses cd Poll

⁴ proplasmata Gelen propriasmata B proplasticon edd veti plastica cd Par 6801 pleurosanta rell

^a Dedicated in 493 B C

^b See XXXIV, 34

^c It was restored (after the fire of 31 B C) by Augustus in 27 B C ^d Or Chalcosthenes (= Καλκοσθένης) ^e cf XXXIV 87

make as handsome a face as possible. The same artist also invented taking casts from statues, and this method advanced to such an extent that no figures or statues were made without a clay model. This shows that the knowledge of modelling in clay was older than that of casting bronze.

XLV Most highly praised modellers were Damophilus and Gorgasus, who were also painters, they had decorated the Shrine^a of Ceres in the Circus Maximus at Rome with both kinds of their art, and there is an inscription on the building in Greek verse in which they indicated that the decorations on the right hand side were the work of Damophilus and those on the left were by Gorgasus. Varro states that before this shrine was built everything in the temples was Tuscanic work^b, and that when this shrine was undergoing restoration,^c the embossed work of the walls was cut out and enclosed in framed panels, and that the figures also were taken from the pediment and dispersed. Chalcosthenes^d also executed at Athens some works in unbaked clay, at the place named the Ceramicus, Potters Quarter, after his workshop. Marcus Varro records that he knew at Rome an artist named Possis who made fruit and grapes in such a way that nobody could tell by sight from the real things. Varro also speaks very highly of Arcesilaus, who was on terms of intimacy with Lucius Lucullus, and says that his sketch-models of clay used to sell for more, among artists themselves, than the finished works of others, and that this artist made the statue of Venus Genetrix in Caesar's Forum and that it was erected before it was finished as there was a great haste to dedicate it, and that the same artist had

*Damophilus
Gorgasus
and others*

*Arcesilaus
c 110-56
B C*

46 B C

PLINY NATURAL HISTORY

dedicandi positam, eidem a Lucullo HS [X] ¹ signum Felicitatis locatum, cui mores utriusque invident, Octavio equiti Romano cratera facere volenti exemplar e gypso factum talento laudat et Pasitelen, qui plasticen matiem caelaturae et statuariae sculpturaeque ² dixit et, cum esset in omnibus is summus, nihil umquam fecit ante quam finit
 157 praeterea elaboratam hanc artem Italiae et maxime Etruriae, Vulcam ³ Veis accitum, cui locaret Tarquinus Priscus Iovis effigiem in Capitolio dicandam, fictilem eum fuisse et ideo miniarum solitum, fictiles in fastigio templi eius quadrigas, de quibus supra ⁴ diximus, ab hoc eodem factum Herculem, qui hodieque materiae nomen in urbe retinet hae enim tum effigies deorum erant lautissimae, nec paenitet nos illorum, qui tales eos coluerit, aurum enim et argentum ne diis quidem conficiebant
 158 XLVI durant etiam nunc plerisque in locis talia simulacra, fastigia quidem templorum etiam in urbe crebra et municipis, multa caelatura et aere suaeque firmitate, sanctiora auro, certe innocentiora in sacris quidem etiam inter has opes hodie non

¹ [X] *Detlefsen* LX *Sillig* LXI *B* LX *rell*

² sculpturae *B*¹ sculpturae *B*² sculpturae *rell*

³ vulcam *B*¹ vulcam *B*² vulgam *rell* (turianum *cd* *Par* 6801) Vulcaniam *con* *Ian*

⁴ supra *con* *Ian* saepe

^a Since Arcesilaus was still doing work for Caesar in 46 B.C., it may well be that the Lucullus here mentioned is the one who was killed at Philippi in 42 B.C.

^b The Hercules Fictilis, 'Hercules in Clay'

contracted with Lucullus to make a statue of Happiness for 1,000,000 sesterces, which was prevented by the death of both parties ^a, and that when a Knight of Rome Octavius desired him to make a wine-bowl he made him a model in plaster for the price of a talent. He also praises Pasiteles, who said that modelling was the mother of chasing and of bronze statuary and sculpture, and who, although he was eminent in all these arts, never made anything before he had made a clay model. He also states that this art had already been brought to perfection by Italy and especially by Etruria, that Vulca was summoned from Veii to receive the contract from Tarquinius Priscus for a statue of Jupiter to be consecrated in the Capitol, and that this Jupiter was made of clay and consequently was regularly painted with cinnabar, and that the four-horse chariots about which we spoke above on the pediment of the temple were modelled in clay, and that the figure of Hercules, which even to-day retains in the city the name ^b of the material it is made of, was the work of the same artist. For these were the most splendid images of gods at that time, and we are not ashamed of those ancestors of ours for worshipping them in that material. For they used not formerly to work up silver and gold even for gods. XLVI Statues of this kind are still to be found at various places. In fact even at Rome and in the Municipal Towns there are many pediments of temples, remarkable for their carving and artistic merit and intrinsic durability, more deserving of respect than gold, and certainly less baneful. At the present day indeed, even in the midst of our present rich resources the preliminary libation is

*Pasiteles**trad* 616
578 B CVIII, 161
XXVIII, 16

PLINY NATURAL HISTORY

murinis crystallinisve, sed fictilibus prohibatur
 simpulis,¹ inenarrabili Terrae benignitate, si quis
 singula aestimet, etiam ut omittantur in frugum,
 159 vini, pomorum, herbarum et fruticum, medicamen-
 torum, metallorum generibus beneficia eius, quae²
 adhuc diximus neque³ assidue satiant figli-
 narum opera, dolis ad vina excogitatis, ad aquas
 tubulis,⁴ ad balneas mammatis,⁵ ad tecta imbric-
 ibus,⁶ coctilibus lateculis ad parietes fundamen-
 taque,⁷ aut quae⁸ iota fiunt, propterea quae⁹ Numa
 160 rex septimum collegium figulorum instituit quin
 et defunctos sese multi fictilibus solis condi maluerit,
 sicut M Vairo, Pythagorio modo in myrti et oleae
 atque populi nigrae foliis maior pars hominum
 terrenis utitur vasis Samia etiam nunc in escu-
 lentis laudantur retinent hanc nobilitatem, et
 Arretium in Italia et calicum tantum Surrentum,
 Hasta, Pollentia, in Hispania Saguntum, in Asia
 161 Pergamum habent et Tiallis ibi opera sua et in
 Italia Mutina, quoniam et sic gentes nobilitantur
 et haec quoque per maria, terras ultio citio por-
 tantur, insignibus iotae officinis¹⁰ Elythris in templo
 hodieque ostenduntur amphorae duae propter tenui-
 tatem consecratae discipuli magistrique certamine,

¹ simpulis *edd* *vett* sin puls *B*¹ sinpuls *B* simpulius
cd *Par* 6801 simpuls *rell*

² *Vll* quaeque, quae quae quaeque *Detlefsen*

³ neque *Mayhoff* vel quae *B* vel *rell*

⁴ *Vll* tabulis

⁵ hamatis *Hermolaus Barbarus*

⁶ imbricibus *hic Mayhoff supra post opera*

ad parietes fundamentisque *conr Mayhoff* (ad fundamenta
Detlefsen) fundamentisque

⁸ ob quae *Hardouin* quae aut *Detlefsen*

⁹ rota fiunt propter quae *B om rell* *In* § 159 *alia*
temptant edd

¹⁰ officis *conr Rackham*

made at sacrifices not from fluor-spar or crystal vessels but with small ladles of earthenware, thanks to the ineffable kindness of Mother Earth, if one considers her gifts in detail, even though we omit her blessings in the various kinds of corn, wine, fruit, herbs and shrubs, drugs and metals, all the things that we have so far mentioned. Nor do our products even in pottery satisfy our needs with their unfailing supply, with jars invented for our wine, and pipes for water, conduits for baths, tiles for our roofs, baked bricks for our house-walls and foundations, or things that are made on a wheel, because of which King Numa established a seventh Guild, the Potters^a. Indeed moreover many people have preferred to be buried in earthenware coffins, for instance Marcus Varron who was interred in the Pythagorean style, in leaves of myrtle, olive and black poplar, the majority of mankind employs earthenware receptacles for this purpose. Among table services Samian pottery is still spoken highly of, this reputation is also retained by Arezzo in Italy, and, merely for cups, by Sorrento, Asti, and Pollenza, and by Saguntum in Spain and Pergamum in Asia Minor. Also Tralles in Asia Minor and Modena in Italy have their respective products, since even this brings nations fame, and their products also, so distinguished are the workshops of the potter's wheel, are carried to and fro across land and sea. In a temple at Elythrae even to-day are on view two wine-jars which were dedicated on account of their fine material, owing to a competition between a master potter and his apprentice as to which

Pottery

trad.
715-672 B.C.

26 B.C.

^a The text of part of § 159 is very uncertain

PLINY NATURAL HISTORY

uter tenuiorem humum, duceret Cois ea laus¹
 maxima, Hadrianis firmitas, nonnullis circa hoc
 162 severitatis quoque exemplis Q Coponium in-
 venimus ambitus damnatum, quia vini amphoram
 dedisset dono ei, cui suffragi latio erat atque ut
 e luxu² quoque aliqua contingat auctoritas figlinis
 tripatium, inquit Fenestella, appellabatur summa
 cenarum lautitia, una erat mureparum, altera
 luporum, tertia mixti piscis, inclinatis iam scilicet
 moribus, ut tamen eos praeferre Graeciae etiam
 philosophis possimus, siquidem in Aristotelis hee-
 dum auctione septuaginta patinas venisse traditur
 163 nos cum unam Aesopi tiagoediarum histionis in
 natura avium diceremus HS C³ stetisse, non dubito
 indignatos legentes at, Hercules, Vitellius in
 principatu suo [X]⁴ HS condidit patinam, cui faciesdae
 fornax in campis exaedificata erat, quoniam eo
 pervenit luxuria, ut etiam fictilia pluris constent
 164 quam murrina propter hanc Mucianus altero con-
 sulatu suo in conquestione exprobravit patinarum
 paludes Vitelli memoriae, non illa foedior, cuius
 veneno Asprenati reo Cassius Severus accusator
 165 obiciebat interisse convivas cxxx nobilitantur his
 quoque oppida, ut Regium et Cumae Samia testa

¹ ea laus *Mayhoff* illa laus *Ulrichs* levitas *Frohner* laus

² e luxu *con Ian* fruxu aut fruceu aut fruxo *edd* (fluxu
cd Poll)

³ C *cd Leid Voss* [C] B C' aut centum aut de *rell*

⁴ [X] B X aut \ *rell*

would make thinner earthenware The pottery of Cos is most famous for this, but that of Adria is most substantial, while there are also some instances of seventy also in relation to pottery We find that Quintus Coponius was found guilty of bribery because he made a present of a jar of wine to a person who had the right to a vote And so that luxury also may contribute some importance to earthenware, the name of a service of three dishes, we are told by Fenestella, used to denote the most luxurious possible banquet one dish was of lamprey, a second of pike and a third of a mixture of fish Clearly manners were already on the decline, though nevertheless we can still prefer them even to those of the philosophers of Greece, inasmuch as it is recorded that at the auction held by the heirs of ^{322 B C} Aristotle seventy earthenware dishes were sold We have already stated when on the subject of buds ^{X 141} that a single dish cost the tragic actor Aesop 100 000 sesterces, and I have no doubt that readers felt indignant, but, good heavens, Vitellius when emperor had a dish made that cost 1,000,000 sesterces, ^{A D 69} and to make which a special furnace was constructed out in open country, as luxury has reached a point when even earthenware costs more than vessels of fluor-spar It was owing to this dish that Mucianus in his second consulship, in a protest ^{A D 70} which he delivered, reproached the memory of Vitellius for dishes as broad as marshes, although this particular dish was not more disgraceful than the poisoned one by which Cassius Severus when prosecuting Asprenas charged him with having caused the death of 130 guests Artistic pottery also confers fame on towns, for instance Reggio and Cumae

PLINY NATURAL HISTORY

Matris deum sacerdotes, qui Galli vocantur, virilitatem amputare nec alteri citra perniciem, M Caeho credamus, qui linguam sic amputandam obiecit gravi probro, tamquam et ipse iam tunc eidem Vitellio malediceret quid non excogitat vita¹ fractis etiam testis utendo, sic ut firmius duent, tunsis calce addita, quae vocant Signina¹ quo genere etiam pavimenta excogitavit

- 166 XLVII Verum et ipsius terrae sunt alia commenta quis enim satis metui pessumam eius partem ideoque pulverem appellatam in Puteolanis collibus opponi maris fluctibus, missumque protinus fieri lapidem unum inexpugnabilem undis et fortiori cotidie, utique si Cumano miscetur cae-
167 mento² eadem est terrae natura et in Cyzicena regione, sed ibi non pulvis, verum ipsa terra qua libeat magnitudine excisa et demersa in mare lapidea extrahitur hoc idem circa Cassandream produnt fieri, et in fonte Cnidio dulci intra octo menses terram lapidescere ab Oropo quidem Aulida usque quidquid attingitur mari terrae mutatur in saxa non multum a pulvere Puteolano

¹ excogitat vita *B* excogitavit vita *Ian* excogitavit ars
cd Par 6801 excogitavit a *rell*

^a Cybele

^b Volcanic ash or earth, now called *pozzolana*

^c The ancient Potidae in the Chalcidic peninsula

^d Of Boeotia

The priests of the Mother ^a of the Gods called Galli castrate themselves, if we accept the account of Marcus Caelius, with a piece of Samian pottery, the only way of avoiding dangerous results, and Caelius proposed as a penalty for an abominable offence that the guilty person should have his tongue cut out in the same way, just as if he were already himself inveighing against the same Vitellius in anticipation. What is there that experience cannot devise? For ~~it~~ employs even broken crockery, making it more solid and durable by pounding it up and adding what is called Segni lime, a kind of material used in a method which experience has also invented for making pavements.

XLVII But there are other inventions also that belong to Earth herself. For who could sufficiently marvel at the fact that the most inferior portion of the earth's substance, which is in consequence designated dust, ^b on the hills of Pozzuoli, encounters the waves of the sea and as soon as it is submerged turns into a single mass of stone that withstands the attacks of the waves and becomes stronger every day, especially if it mixed with broken quarry-stone from Cumae? In the Cyzicus district also the nature of the earth is the same, but there not dust but the earth itself is cut out in blocks of any size wanted and plunged into the sea, and when drawn out, it is of the consistency of stone. The same is said to take place in the neighbourhood of Cassandria, ^c and it is stated that in a fresh water spring at Cnidus earth becomes petrified in less than eight months. On the coast ^d from Oropus to Aulis all the earth that the sea touches is turned into rocks. The finest portion of the sand from the Nile is not very different

*Pozzolana
and other
earths*

- distat e Nilo harena tenuissima sui parte, non ad
sustinenda maria fluctusque frangendos, sed ad
168 debellandi corpora palaestiae studis inde certe
Patriobio, Neronis principis liberto, advehebatur
quin et Crateio et Leonnato ac Meleagro, Alexandri
Magni ducibus, sabulum¹ hoc portari² cum reliquis
militaribus commerciis reperio, plura de hac parte
non dicturus, non, Hercules, magis quam de teriae
usu in ceromatis, quibus exercendo fuventus nostia
169 corporis vires perdit animorum XLVIII quid?
non in Africa Hispaniaque e terra parietes, quos
appellant formaceos, quoniam in forma circumdatis
utrumque tabulis inferciuntur vixius quam struun-
tur, aëvis durant, incorrupti imbribus, ventis, ignibus
omnique caemento firmiores³ spectat etiam nunc
speculas Hannibalis Hispania terreasque turres
iugis montium impositas hinc et caespitum natura
castrorum vallis accommodata contraque fluminum
impetus aggeribus inhi quidem crates parietum
luto et ut³ lateribus crudis exstrui quis ignoret?
170 XLIX Lateres non sunt ex sabuloso neque
harenoso multoque minus calculoso ducendi solo, sed
e cretoso et albicante aut ex iubeica vel etiam e

¹ sabulum *cd* *Par* 6801, *cd* *Par* *Lat* 6797 sabium *B*
sabulum *rell* solitum *Mayhoff*

² *Vl* portare portaveire *J Müller*

³ et ut *Warmington* et

^a Who was in Spain 221-219 B.C. preparing war against Rome

from the dust of Pozzuoli, not to be used for an embankment against the sea and to act as a break-water against waves, but for the purpose of subduing men's bodies for the exercises of the wrestling school. At all events it used to be imported from there for Patrobius, a freedman of the emperor Nero, and moreover I also find that this sand was carried with other military commodities for Alexander the Great's generals Craterus, Leonnatus and Meleager, though I shall not say more about this part of the subject any more than, by heaven, I shall mention the use of earth in making ointments, employed by our young men while ruining their vigour of mind by exercising their muscles. XLVIII Moreover, are there not in Africa and Spain walls made of earth that are called framed walls, because they are made by packing in a frame enclosed between two boards, one on each side, and so are stuffed in rather than built, and do they not last for ages, undamaged by rain, wind and fire, and stronger than any quarry-stone? Spain still sees the watchtowers of Hannibal^a and turrets of earth placed on the mountain ridges. From the same source is also obtained the substantial sods of earth suitable for the fortifications of our camps and for embankments against the violent flooding of rivers. At all events everybody knows that party-walls can be made by coating hurdles with clay, and are thus built up as if with raw bricks.

XLIX Bricks should not be made from a sandy *Bricks* or gravelly soil and far less from a stony one, but from a maily and white soil or else from a red earth, or even with the aid of sand, at all events if coarse male sand is used. The best time for making bricks

PLINY NATURAL HISTORY

sabulo, masculo certe finguntur optime vere, nam solstitio imosi fiunt aëdificiis non nisi bimos probant, quin¹ et intritam ipsam eorum, priusquam fingantur, macerari oportet

171 Genera eorum fiunt² tria didoron,³ quo nos⁴ utimur, longum sesquipedem, latum pedem, alterum tetradoron, tertium pentadoron Graeci enim antiqui δῶρον palmum vocabant et ideo δῶρα munera, quia manu darentur, ergo a quattuor et quinque palmis, prout sunt, nominantur eadem est et latitudo minore privatis operibus, maiore in publicis utuntur in Graecia Pitanae in Asia et in ulteriore Hispania civitatibus Maxilua et Callet⁵ fiunt lateres, qui siccati non merguntur in aqua sunt enim e terra pumicosa, cum subigi potest, utilissima

172 Graeci, praeterquam ubi e silice fieri poterat structura, latericios parietes praetulerunt sunt enim aeterni, si ad perpendicularum fiant ideo et publica opera et regias domos sic struxerunt murum Athenis, qui ad montem Hymettum spectat, Patris aedes Iovis et Herculis, quamvis lapideas columnas et epistylia circumdarent, domum Trallibus regiam Attali, item Saidibus Croesi, quam gerusian fecere,

¹ quia *Mayhoff*

² fiunt *Mayhoff coll I truv II 3* qui *B* que *rell*

³ didoron *Hermolaus Barbarus* lydion (lidron *cd Par* 6801)

⁴ nos *add Mayhoff coll I truv* volgo *J Müller*

⁵ Callet *Urlichs, Detlefsen coll III 12* callent *B* canlent *aut canlento aut calento rell*

^a As a measure this could be 4 inches or 9, but here it is 9

^b *Silex* is in particular the strong concrete made by the Romans from a lava mixed with lime and *pozzolana* (for which see § 166, note)

^c Attalus I of Pergamum, 241-197 B C

is in spring, as at midsummer they tend to crack. For buildings, only bricks two years old are recommended, moreover the material for them when it has been pounded should be well soaked before they are moulded.

Three kinds of bricks are made the 'didoion,' the one employed by us, eighteen inches long and a foot wide, second the 'tetradoron' and third the 'pentadoron,' *doron* being an old Greek word meaning the palm of the hand ^a—from which comes *doron*, meaning a gift, because a gift was given by the hand. Consequently the bricks get their names from four or five palms' length as the case may be. Their breadth is in all cases the same. In Greece the smaller kind is used for private structures and the larger in public buildings. At Pitana in Asia Minor as also in the city states of Mavilua and Callet in Further Spain bricks are made which when dried will not sink in water, being made of pumice-like earth, which is an extremely useful material when it is capable of being worked. The Greeks preferred brick walls except in places permitting of a stone ^b structure, as brick walls last for ever if built exactly perpendicular. Consequently that was how they built both public works and kings' palaces—the wall at Athens that faces towards Mount Hymettus, at Patrae the Shrines of Zeus and of Heracles (although the columns and architraves with which they surrounded these were of stone), and the royal palace of Attalus ^c at Tralles and likewise the palace of Croesus at Sardis, which ^{560-546 B.C.} they converted into a house of elders,^d and that of

^a Pliny's source Vitruvius II 8 10 takes *γερουσία* here as a home for the aged, but it must mean council house.

PLINY NATURAL HISTORY

Halicarnasi Mausoli, quæ etiam nunc duiant
 173 Lacedaemone quidem latericis parietibus excisum
 opus tectorium propter excellentiam picturæ ligneis
 formis inclusum Romam deportare in aedilitate
 ad comitum evocandum Murena et Varro cum
 opus per se mirum esset, translatum tamen magis
 mirabantur in Italia quoque latericium murus
 Arreti et Mervinæ est Romæ non fiunt talia
 aedificia, qui sesquipedalis paries non plus quam
 unam contignationem tolerat, cautumque est, ne
 communis crassior fiat, nec intergenitorum ratio
 patitur

174 L Haec sint dicta de lateribus in teriæ autem
 reliquis generibus vel maxime mira natura est
 sulphuris, quo plurima domantur nascitur in insulis
 Aeolus inter Siciliam et Italiam, quas adire divimus,
 sed nobilissimum in Melo insula in Italia quoque
 invenitur in Neapolitano Campanoque agro collibus,
 qui vocantur Leucogaei ibi e cuniculis effossum

175 perficitur igni generis IIII vivum, quod Graeci
 apyron vocant, nascitur solidum¹ solum²—cetera³
 enim liquore constant et conficiuntur oleo incocta—,
 vivum effoditur trahiturque et viret solo ex
 omnibus generibus medici utuntur⁴ alterum genus
 appellant glaebam, fullonum tantum officinis fa-

¹ solidum hoc est glaeba *cdd del h e g Urlichs, Detlefsen*

² solum *del Urlichs, Detlefsen*

³ cetera *cd Leid Voss m 2* ex omnibus generibus (*cm B*) medici utuntur alterum genus ceteri *B, cd Leid Voss m 1 cd Flor Ricc vide infra* ex omnibus utuntur cetera *rell*

⁴ solo utuntur *om cd Par Lat 6797 cd Par 6801 cd Tolet*

Mausolus^a at Halicarnassus, buildings still standing 377-353 B C
 Muiena and Vaino in their aedileship had some
 plaster work on brick walls at Sparta cut away,
 and because of the excellence of its painting had
 it enclosed in wooden frames and brought to Rome
 to decorate the Assembly-place. It was in itself a
 wonderful piece of work, yet its transfer caused even
 more admiration. In Italy also there is a brick wall
 at Arezzo and at Mevania. Structures of this sort
 are not erected in Rome, because an eighteen-inch
 wall will only carry a single storey, and there is a
 regulation forbidding any partition exceeding that
 thickness. nor does the system used for party-walls
 permit of it.

L Let this be what we say about bricks. Among *Sulphur*
 the other kinds of earth the one with the most remark-
 able properties is sulphur, which exercises a great
 power over a great many other substances. Sulphur
 occurs in the Aeolian Islands between Sicily and
 Italy, which we have said are volcanic, but the most III 92 ff
 famous is on the island of Melos. It is also found in
 Italy, in the territory of Naples and Campania, on
 the hills called the Leucogaei. It is there dug out of
 mine-shafts and dressed with fire. There are four
 kinds: live sulphur, the Greek name for which
 means 'untouched by fire,' which alone forms as a
 solid mass—for all the other sorts consist of liquid
 and are prepared by boiling in oil, live sulphur is
 dug up, and it is translucent and of a green colour,
 it is the only one of all the kinds that is employed
 by doctors. The second kind is called 'clod-
 sulphur,' and is commonly found only in fullers'

^a The remains of his monument the Mausoleum were brought
 to England in 1859

miliare tertio quoque generi unus tantum est
 usus ad lanas suffiendas,¹ quoniam candorem molli-
 tiamque confert egula vocatui hoc genus, quantum
 autem² ad ellychnia maxime conficienda, cetero
 tantum³ vis est ut morbos comitiales deprehendat
 nidore inpositum igni lusit et Anaxilaus eo, addens
 in calicem vini prunaque subdita circumferens,
 exardescantis percussu⁴ pallorem diu velut
 176 defunctorum effundente in⁵ convivis⁶ natura eius
 excalfacit, concoquit, sed et discutit collectiones
 corporum, ob hoc talibus⁷ emplastris malagmatisque
 miscetur ienibus quoque et lumbis in dolore cum
 adipe mure prodest inpositum aufert et lichenas
 faciei cum terebinthi resina et lepras, haipax ita
 vocatur a celeritate praebeandi,⁸ avelli enim subinde
 177 debet prodest et suspensiosis linctu,⁹ purulenta
 quoque extussientibus et contra scorpionum ictus
 vitilignes vivum nitio mixtum atque ex aceto tutum
 et inlitum tollit, item lendes, et in palpebris aceto
 sandaracato admixtum habet et in religionibus
 locum ad expiandas suffitu domos sentitur vis eius
 et in aquis ferventibus, neque alia res facilius accen-

¹ suffiendas coll *Isid Gelen* suffiendas

² autem cd *Par* 6801 caute vell (cate cd *Leud* los
 aptum *Isid*) con *καυτηρ Mayhoff*

³ tanta cd *Par* 6801 ex *Isid* tamen vel vis tantum
 con *Mayhoff*

⁴ repercussu edd vell ex *Isid* percussu *B* supercussu
 aut se percussu vell

⁵ effundente in *Mayhoff* effundentem *B* effundente vell

⁶ convivis *B*

⁷ albis *Frohner*

⁸ praebeandi *B* uellendi cd *Par* 6801 praeuelli vell
 avellendi edd vell prendendi *Ian*

⁹ linctu *Sillig* linctum aut linctus aut lictus edd (unctu *B*)

workshops. The third kind also is only employed for one purpose, for smoking woollens from beneath, as it bestows whiteness and softness, this sort is called *egula*. The fourth kind is specially used for making lamp-wicks. For the rest, sulphur is so potent that when put on the fire it detects epilepsy by its smell. Anaxilaus even made a sport with it by putting some in a cup of wine and placing a hot coal underneath and handing it round at dinner-parties, when by its reflection it threw on their faces a dreadful pallor as though they were dead. Its property is calorific and concoctive,^a but it also disperses abscesses on the body, and consequently is used as an ingredient in plasters and poultices for such cases. It is also remarkably beneficial for the kidneys and loins if in cases of pain it is applied to them with grease. In combination with turpentine it also removes lichenous growths on the face and leprosy, so it is called *harpax*,^b owing to the speed with which it has to be applied, which is caused by the need for immediate removal. Used as an electuary it is good for cases of asthma, and also purulent expectoration after coughing and as a remedy for the sting of scorpions. Live sulphur mixed with soda and pounded in vinegar and used as a liniment removes cutaneous eruptions, and also eggs of lice, and in combination with vinegar mixed with realgar it is useful on the eyelids. Sulphur also has a place in religious ceremonies, for the purpose of purifying houses by fumigation. Its potency is also perceptible in hot springs of water, and no other substance is more easily ignited,

^a *I e* brings boils, etc., to a head

^b *ἄρπᾱξ* 'rapacious,' from *ἄρπᾱζω*, 'seize,' 'snatch'

ditui, quo apparet ignum vim magnam ei mesc
fulmina, fulguia quoque sulphuris odorem habent,
ac lux ipsa eorum sulphurea est

- 178 LI Et bituminis vicina natura est aliubi limus,
aliubi terra est, limus e Iudaeae lacu, ut diximus,
emergens, terra in Syria circa Sidonem oppidum
maritimum spissantui haec utrique et in densi-
tatem coeunt est vero liquidum bitumen, sicut
Zacynthium et quod a Babylone vehitur, ibi
quidem et candidum gignitur liquidum est et
Apolloniaticum, quae omnia Graeci pissasphalton
179 appellant ex argumento picis ac bituminis gignitur
et pingue oleique liquoris in Sicilia Agriagantino
fonte, inficiens rivum incolae id harundinum pani-
culis colligunt, citissime sic adhaerescens, utunturque
eo ad lucernarum lumina olei vice, item ad scabiem
umentorum sunt qui et naphtham, de qua in
secundo diximus volume, bituminis generibus ad-
scribant, verum eius ardens natura et ignum cognata
180 procul ab omni usu abest bituminis probatio ut
quam maxime splendeat sitque ponderosum, graveo-
lens,¹ atrum² modice, quoniam adulteratur pice
vis quae sulphuri sistit, discutit, contrahit, glutinat
serpentes accensum nidore fugat ad suffusiones

¹ graveolens *Mayhoff coll Diosc* grave leue (lene *cd Par*
6801) graveolens, leve *Kulb*

² atrum *Mayhoff coll Diosc* autem

^a This occurs as a liquid (petroleum), as a liquid solid
(mineral pitch and tar) and as a solid (asphalt)

^b The Dead Sea

showing that it contains a powerful abundance of fire. Thunderbolts and lightning also have a smell of sulphur, and their actual light has a sulphurous quality.

LI Near to the nature of sulphur is also that of *Bitumen* bitumen ^a. In some places it is a slime and others an earth, the slime being emitted, as we have said, ^{v, 72} from the lake ^b of Judaea and the earth being found in the neighbourhood of the seaside town of Sidon in Syria. Both of these varieties get thickened and solidify into a dense consistency. But there is also a liquid sort of bitumen, for instance that of Zacynthus and the kind imported from Babylon, at the latter place indeed it also occurs with a white colour. The bitumen from Apollonia also is liquid, and all of these varieties are called by the Greeks *pissasphalt*, from its likeness to vegetable-pitch and bitumen. There is also an unctuous bitumen, of the consistency of oil, found in Sicily, in a spring at Gngenti, the stream from which is tainted by it. The inhabitants collect it on tufts of reeds, as it very quickly adheres to them, and they use it instead of oil for burning in lamps, and also as a cure for scab in beasts of burden. Some authorities also include among the varieties of bitumen naphtha about which we spoke in Book II, but its burning property ^{II, 215} and liability to ignition is far removed from any practical use. The test of bitumen is that it should be extremely brilliant, and that it should be massive, with an oppressive smell, when quite black, its brilliance is moderate, as it is commonly adulterated with vegetable pitch. Its medical effect is that of sulphur, as it is astringent, dispersive, contractive, and agglutinating. Ignited it drives away snakes

- oculorum et albugines Babylonium efficax traditur, item ad lepias, lichenas pruitusque corporum inlinitur et podagris omnia autem eius genera incommodos oculorum pilos replicant, dentium
 181 doloribus medentur simul nitro intrito lenit¹ tussim veterem et anhelitus cum vino potum, dysentericis etiam datui eodem modo sistitque alvum cum aceto vero potum discutit concretum sanguinem ac detrahit mitigat lumborum dolores, item articulorum, cum farina hordeacea inpositura emplastrum peculiare facit suo nomine sanguinem sistit, vulnera colligit, glutinat nervos utuntur etiam ad quantanis bituminis diachma et hedyosmi pari
 182 pondere cum muiiae obolo subacti comitiales morbos ustum deprendit volvarum strangulationes olfactu discutit cum vino et castoreo, procidentem suffitu reprimat, purgationes feminarum in vino potum elicit in reliquo usu aeramentis inlinitur fumatque ea contra ignes divinus et tinguere solitum aes eo statuasque inlini calcis quoque usum prae-buit ita feruminatis Babylonis muiis placet in ferrius fabiorum officinis tinguendo ferro clavorum capitibus et multis aliis usibus
 183 LII Nec minor est aut adeo dissimilis aluminis opera, quod intellegitur salsugo terrae pluviae et

¹ intrito lenit *Mayhoff coll Diosc* inlinitum (*Sillig*) lenit *Detlefsen* inlinitus *B* illitum aut illini aut inlini *rell*

^a Several astringent substances were included in the word *alumen*, especially, it seems, aluminum sulphates sulphate of iron and common potash alum also kalinite and perhaps also certain halotrichites (*K C Bailey, The Elder Pliny's Chapters on Chemical Subjects*, II, p 233)

by its smell Babylonian bitumen is said to be serviceable for cataract and film in the eye, and also for leprosy lichen and itch. It is also used as a liniment for gout, while all varieties of it are used to fold back eyelashes that get in the way of sight, and also to cure toothache, when smeared on with soda. Taken as a draught with wine it alleviates an inveterate cough and shortness of breath, and it is also given in the same way in cases of dysentery, and arrests diarrhoea. Drunk however with vinegar it dissolves and brings away coagulated blood. It reduces pains in the loins and also in the joints, and applied with barley-meal it makes a special kind of plaster that bears its name. It stops a flow of blood, closes up wounds, and unites severed muscles. It is employed also for quartan fevers, the dose being a dram of bitumen and an equal weight of wild mint pounded up with a sixth of a dram of myrrh. Buint bitumen detects cases of epilepsy, and mixed with wine and beaver-oil its scent dissipates suffocations of the womb, its smoke when applied from beneath relieves prolapsus of the womb, and drunk in wine it hastens menstruation. Among other uses of it, it is applied as a coating to copper and bronze vessels to make them fireproof. We have stated that it also used to be the practice XXXIV, 1, to employ it for staining copper and bronze and coating statues. It has also been used as a substitute for lime, the walls of Babylon being cemented with it. In smithies also it is in favour for varnishing iron and the heads of nails and many other uses.

LII Not less important or very different is the *Alum* use made of alum,^a by which is meant a salt exudation from the earth. There are several varieties of

eius genera in Cyprio candidum et nigrum, exigua
 coloris ¹ differentia, cum sit usus magna, ² quoniam
 inficiendis claro colore lanis candidum liquidumque
 utilissimum est contraque fuscis aut obscuris nigrum
 184 et aurum nigro purgatur fit autem omne ex aqua
 limoque, hoc est terrae exudantis natura con-
 vivatum hieme aestivis solibus maturatur quod
 fuit ex eo praecox, candidius fit gignitur autem in
 Hispania, Aegypto, Armenia, Macedonia, Ponto,
 Africa, insulis Sardinia, Melo Lipara, Strongyle,
 laudatissimum in Aegypto, proximum in Melo
 huius quoque duae species, liquidum spissumque
 liquidi probatio ut sit limpidum lacteumque, sine
 offensis ficiendi, cum quodam igniculo coloris ³ hoc
 phorimon ⁴ vocant an sit adulteratum, deprehen-
 ditur suco Punici mali, sincerum enim mixtura ea
 non nigrescit ⁵ ulterius genus est pallidi et scabii
 et quod inficiatur et ⁶ galla, ideoque hoc vocant

¹ coloribusque *B* coloris visusque con *Mayhoff*

² magna *Galen* magni

³ caloris *edd vett*

⁴ phorimon *edd vett coll Galen*, κατὰ ποτον, vi 3 porth
 mon aut portmon (*B*) aut pontinon aut posthonon

⁵ mixtura ea non nigrescit *K C Bailey* mixtura ea
 nigrescit *cl Flor Ricc ut videtur* mixturam fugit *cl Par*
 6801 mixtura *rell* mixtura inficitur con *Mayhoff*

⁶ et *Mayhoff* a *B* om *rell*

^a Sulphate of aluminium would be useful for dyeing,
 potash alum and alunogen could provide the bright colour,
 and alums containing metals the sombre colours (*K C Bailey*)

^b Cf XXXIII, 65, also for removing baleful influences of
 gold held above the head, cf XXXIII, 84

^c Where potash alum is found

it In Cyprus there is a white alum and another sort of a darker colour, though the difference of colour is only slight, nevertheless the use made of them is very different, as the white and liquid kind is most useful for dying woollens a bright colour whereas the black kind is best for dark or sombre hues ^a Black alum is also used in cleaning ^b gold All alum is produced from water and slime, that is, a substance exuded by the earth, this collects naturally in a hollow in winter and its maturity by crystallisation is completed by the sunshine of summer, the part of it that separates earliest is whiter in colour It occurs in Spain, Egypt, Armenia, Macedonia, Pontus, Africa, and the islands Sardinia, Melos, Lipari ^c and Stromboli, the most highly valued is in Egypt and the next best in Melos The alum of Melos also is of two kinds, fluid ^d and dense The test of the fluid kind is that it should be of a limpid, milky consistency, free from grit when rubbed between the fingers, and giving a slight glow of colour ^e, this kind is called in Greek 'phorimon' in the sense of 'abundant' Its adulteration can be detected ^f by means of the juice of a pomegranate, as this mixed with it does not turn it black if it is pure The other kind ^g is the pale rough alum which may be stained with oak-gall also, and consequently this is called 'paraphoron,'

^a Apparently the solid kind (potash alum especially) in solution

^b So MSS, *caloris* ('heat') is a change based on what is probably a corruption in the text of Dioscorides

^c That is, an alum supposedly free from iron would, if it contained iron, turn juice of pomegranate black

^d Probably light yellow halotrichite (hydrated iron sulphate with aluminium) and green vitriol (ferrous sulphate)

- 185 *paraphoion* liquidi aluminis vis adstringere, inducere, iocere melle¹ admixto sanat oris ulcera, papulas pruritusque haec curatio fit in balneis et mellis partibus, tertia aluminis virus alarum sudorisque sedat sumitui pilulis contra henis vitia pellendumque per urinam sanguinem emendat et scabiem nitro ac melanthio admixtis
- 186 Concreti aluminis unum genus *σχιστόν* appellant Graeci, in capillamenta quaedam canescentia dehiscens, unde quidam trichitim potius appellavere hoc fit e lapide, ex quo et aes—chalcitim vocant—, ut² sudor quidam eius lapidis in spumam coagulatus hoc genus aluminis minus siccatur minusque sistit umorem inutilem corporum, et auribus magnopere prodest infusum, vel inlitum et oris ulceribus dentibusque et si³ saliva cum eo contineatur et oculorum medicamentis inseritur apte verendisque utriusque sexus coquitur in catinis,⁴ donec liquari
- 187 desinat inertioris est alterum generis, quod *strongylen* vocant duae et eius species, fungosum atque omni umore dilui facile, quod in totum damnatum melius pumicosum et foraminum fistulis spongiae simile rotundumque natura, candido propius, cum quadam pinguitudine, sine harenis, friabile, nec inficiens nigritia hoc coquitur per se carbonibus

¹ melli *B* melli admixtum con *Mayhoff*

² vocant—, ut *Mayhoff* vocant ut sit *edd vet* vocamus *B* vocatus *cl Leid Lips* vocatur *rell*

³ et si *Mayhoff* et is *B*¹ et his *B*² si *cl Par* 6801 et *rell*

⁴ catinis *B* patinis *rell*

^a The following medical uses are like the modern uses of potash alum

^b Including potash alum, halotrichite, etc

^c Both potash alum and aluminium sulphate, if heated, melt, swell and solidify into 'burnt alum'

perverted' or adulterated alum. Liquid alum^a has an astringent, hardening and coniosive property. Mixed with honey it cures ulcers in the mouth, pimples and eruptions, this treatment is carried out in baths containing two parts of honey to one of alum. It reduces odour from the armpits and perspiration. It is taken in pills against disorders of the spleen and discharge of blood in the urine. Mixed with soda and chamomile it is also a remedy for scabies.

One kind^b of solid alum which is called in Greek schiston, 'splittable,' splits into a sort of filament of a whitish colour, owing to which some people have preferred to give it in Greek the name of trichitis, 'hairy alum.' This is produced from the same ore as copper, known as copperstone, a sort of sweat from that mineral, coagulated into foam. This kind of alum has less drying effect and serves less to arrest the detrimental humours of the body, but it is extremely beneficial as an ear-wash, or as a liniment also for ulcers of the mouth and for the teeth, and if it is retained in the mouth with saliva, or it forms a suitable ingredient in medicines for the eyes and for the genital organs of either sex. It is roasted in crucibles until it has quite lost its liquidity^c. There is another alum of a less active kind, called in Greek strongyle, 'round alum.' Of this also there are two varieties, the fungous which dissolves easily in any liquid and which is rejected as entirely worthless, and a better kind which is porous and pierced with small holes like a sponge and of a round formation, nearer white in colour, possessing a certain quality of unctuousness, free from grit, friable, and not apt to cause a black stain. This is roasted by itself on

- 188 puris, donec cinis fiat Optimum ex omnibus quod
 Melinum vocant ab insula, ut diximus nulli vis
 maiori neque adstringendi neque denigandi neque
 induendi, nullum spissius oculorum scabritias
 extenuat, combustum utilis epiphoris inhibendis,
 sic et ad prius corpus sanguinem quoque
 sistit intus potum,¹ foris inlitum evulsis pilis ex
 aceto inlinitur renascentesque molli in sanguinem
 189 summa² omnium generum vis in adstringendo, unde
 nomen Graecis ob id oculorum vitis aptissima
 sunt, sanguinis fluctiones inhibent cum adipe
 putrescentia ulcerum compescit³—sic et infantium
 ulcera⁴ et hydropicorum eruptiones siccant—et
 aurum vitia cum succo Punici mali et unguum sca-
 britias cicatricumque duntias et pterygia ac per-
 miones, phagedaenas ulcerum ex aceto aut cum galla
 pari pondere cremata, lepras cum succo oleum, cum
 salis vero in partibus vitia, quae seipunt, lentes et
 190 alia capillorum animalia aquae⁵ permixtum sic et
 ambustus prodest et furfuribus corporum cum sero
 picis infunditur et dysintericis uvamque in ore
 comprimit ac tonsillas ad omnia, quae in ceteris

¹ potum *Sillig, Ian* totum aut tutum

² *Vl* summam

³ *Post compescit del* cum adipe *K C Barley*

⁴ sic ulcera *supra ante* putrescentia *cd Par* 6801

⁵ aquae *con Ian, Sillig* aque *B²* atque *B¹* quae *cd*
Leid Lips que *rell*

^a In § 184 Pliny implies that the best is the Egyptian

^b *Στυπτηρία*

clean hot coals till it is reduced to ash. The best^a of all kinds is that called Melos alum, after the island of that name, as we said, no other kind has a § 184 greater power of acting as an astringent, giving a black stain and hardening, and none other has a closer consistency. It removes granulations of the eyes, and is still more efficacious in arresting defluxions when calcined, and in that state also it is applied to itchings on the body. Taken as a draught or applied externally it also arrests hæmorrhage. It is applied in vinegar to parts from which the hair has been removed and changes into soft down the hair that grows in its place. The chief property of all kinds of alum is their astringent effect, which gives it its name^b in Greek. This makes them extremely suitable for eye troubles, and effective in arresting hæmorrhage. Mixed with laid it checks the spread of putrid ulcers—so applied it also dries ulcers in infants and eruptions in cases of dropsy—and, mixed with pomegranate juice, it checks ear troubles and malformations of the nails and hardening of scars, and flesh growing over the nails, and chilblains. Calcined with vinegar or gallnuts to an equal weight it heals gangrenous ulcers, and, if mixed with cabbage juice, pruritus, or if with twice the quantity of salt, serpiginous eruptions, and if thoroughly mixed with water, it kills eggs of lice and other insects that infest the hair. Used in the same way it is also good for burns, and mixed with watery fluid from vegetable pitch for scurf on the body. It is also used as an injection for dysentery, and taken in the mouth it reduces swellings of the uvula and tonsils. It must be understood that for all the purposes which we have mentioned in the case of the other

generibus diximus, efficacius intellegatur ex Melo advectum Ad¹ reliquos usus vitae in cornis lanisque perficiendis quanti sit momenti, significatum est

191 LIII Ab his per se ad medicinam pertinentia teriae genera tractabimus Samiae ii sunt, quae collyrium et quae asteri appellantur prius huius ut recens sit ac lenissima² linguaeque glutinosa, altera glaebosior³, candida utraque uritui, lavatur sunt qui praeferant priorem prosunt sanguinem expuentibus, emplastrisque, quae siccandi causa componuntur, oculorum quoque medicamentis miscentur

192 LIV Eretia totidem differentias habet, namque est alba et cineirea, quae praefertur in medicina probatur mollitia et quod, si aere perducatur, violacium reddit colorem vis et ratio eius, in medendo dicta est inter pigmenta

193 LV Lavatur omnis terra—in hoc enim loco dicemus—perfusa aqua siccataque solibus, iterum ex aqua tuta ac reposita, donec consadat et digeri possit in pastillos coquitur in calicibus crebro concussis

194 LVI Est in medicaminibus et Chia teri candicans effectus eius idem⁴ qui Samiae, usus ad mulierum maxime cutem idem et Selinusiae lactei coloris

¹ advectum Ad K C Bailey advectum nam ad cdd pro nam con iam Bailey

² lenissima cdd (lenis cd Par 6801) levissima Dellefsen, Urlichs levis Hermolaus Barbarus

³ glaebosior Sillig glebosior aut globosior

⁴ eius idem Mayhoff eiusdem

^a Kaolinite or china clay, which is sometimes found in fan shaped (stu like) arrangements of plates, but generally in white, greyish, or yellowish masses (K C Bailey) The latter would be those used for eye salves

kinds the alum imported from Melos is more efficacious. It has been indicated how important § 183 it is for the other requirements of life in giving a finish to hides and woollens.

LIII Next to these we will deal with the various kinds of earth which are connected with medicine. There are two sorts of Samos earth,^a called collyrium, 'eye-salve,' and stai-earth. The recommendation of the former is that it must be fresh and very soft and sticky to the tongue, the second is more lumpy, both are white in colour. The process is to calcine them and then to wash them. Some people prefer the former kind. They are beneficial for people spitting blood, and for plasters made up for drying purposes, and they are also used as an ingredient in medicines for the eyes. *Uses of various earths*
Samian

LIV Earth of Eretria^b has the same number of varieties, as one is white and one ash-coloured, the latter preferred in medicine. It is tested by its softness and by its leaving a violet tint if rubbed on copper. Its efficacy and the method of using it as a medicine have been spoken of among the pigments § 22 *Eretrian*

LV^c All these earths—we will mention it in this place—are washed by having water poured over them and dried in the sun, and then after being put in water again ground up and left to stand, till they settle down and can be divided into tablets. They are boiled in cups that are repeatedly well shaken.

LVI White earth^c of Chios is also among medicaments, its effect is the same as that of Samos earth. It is specially used as a cosmetic for the skin of women, and Selinunte earth is used in the same way. The latter is of the colour of milk, and it *Chian and other earths*

^b Cf §§ 30, 38

^c Some kind of china clay

haec et aqua dilui celerrima¹, eadem lacte diluta tectoriorum albaria interpolantur pignitis² Eretiae similima est, grandioribus tantum glæbis glutinosaque effectus eius idem qui Cimolae, infirmior tantum bitumini similima est ampelitis³ experimentum eius, si cerae modo accepto oleo liquescat et si nigricans colos maneat tostae usus ad molliendum discutiendumque, et ad haec medicamentis additur, praecipue in calliblepharis et inficiendis capillis

- 195 LVII Cretae plura genera ex his Cimolae duo ad medicos pertinentia, candidum et ad purpurissum inclinans vis utrique ad discutiendos tumores, sistendas fluctiones aceto adsumpto panos quoque et parotidas cohibet et lenem inlita pusulasque, si vero aphronitrum et cyprum⁴ adiciatur et acetum, pedum tumores ita, ut in sole curatio haec fiat et
196 post vi horas aqua salsa abluatur testium tumoribus cypio et cera addita prodest et refrigerandi quoque natura cretae est, sudoresque immodicos sistit inlita atque ita papulas cohibet ex vino adsumpta in balneis laudatur maxime Thessalica nascitur et in Lycia circa Bubonem, Est et alius Cimolae usus in vestibus nam Sarda

¹ celerrima *edd vett* ceterima aut ceterum (teterrima *cd Par Lat* 6797)

² pignitis *Hermolaus Barbarus* phnicis aut pntis aut sim

³ ampelitis *Hermolaus Barbarus* appellitis

⁴ cyprum *cd Par* 6801 cyprus *Brotier* nitrum *Gelen*

^a The word means any fullers' earths, here particularly calcium montmorillonite from the island Argentiera or Cimolo in the Aegean

^b ἀφρόνιτρον, more properly ἀφρος νίτρου, 'foam of soda', probably pure soda or possibly partly causticised soda, whereas ordinary nitrum was carbonate of soda

^c Obtained from the flowers of *Lawsonia alba*

dissolves very quickly in water, and likewise dissolved in milk it is used for touching up the whitewash on plastered walls. Pnigitis, or 'suffocating' earth closely resembles that of Eretia, only it is in larger lumps and is sticky. It produces the same effect as Cimolian earth, although it is less powerful. Ampelitis or 'vine' earth is very like bitumen. The test for it is whether it dissolves when oil is put in it, like wax, and whether when roasted it retains a blackish colour. It is used for an emollient and dissipant, and is added to drugs for these purposes, especially in the case of eye-lash beautifiers and for hair dyes.

*Asphaltic
deposits*

LVII There are several sorts of white earth. Among them there are two sorts of Cimolian earth^a that concern doctors, one bright white and one inclining to purple. Either is effective for dispelling tumours, and, with vinegar added, for stopping fluxes. They also check swellings and inflammation of the parotid glands, and applied as a liniment, troubles of the spleen and pimples, while if foam-soda^b and oil of cyprios^c and vinegar are added, they cure swollen feet, provided the treatment is applied in the sun, and the application is washed off again with salt water six hours later. A mixture of this earth with oil of cyprios and wax is good for swellings of the testicles. Cretaceous earth also possesses cooling properties, and applied in a liniment it stops immoderate sweating, and likewise taken in wine while in a bath it removes pimples. The kind from Thessaly is most esteemed, but it is also found in the neighbourhood of Bubo in Lycia. Another use also made of Cimolian earth is in regard to cloth. The kind called Sarda, which is brought

*Cimolian
earths*

quae adfertur e Sardinia, candidis tantum adsumitur,
 inutilis versicoloribus, et¹ est vilissima omnium
 Cimoliae generum, pretiosior Umblica et quam
 197 vocant saxum proprietate saxi quod crescit in
 macerando, itaque² pondere emitur, illa mensura
 Umblica non nisi polendis vestibus adsumitur
 neque enim pigebit hanc quoque partem adtingere,
 cum lex Metilia extet fullonibus dicta, quam C
 Flaminius L Aemilius censores dedere ad populum
 198 ferendam adeo omnia maioribus curae fuisse
 ergo ordo hic est primum abluitur vestis Sarda,
 dein sulphure sufficitur, mox desquamatur Cimolia
 quae est coloris veri fucatus enim deprehenditur
 nigrescitque et funditur sulphure, veros autem et
 pretiosos colores emollit Cimolia et quodam nitore
 exhilarat contristatos sulphure candidis vestibus
 saxum utilius a sulphure, inimicum coloribus Graecia
 pro Cimolia Tymphaico³ utitur gypso

199 LVIII Alia creta argentaria appellatur nitorem
 argento reddens, set vilissima qua circum praeducere
 ad victoriae notam pedesque venalium trans maria
 advectorum denotare instituerunt maiores, talemque

¹ ea con Mayhoff

² itaque Mayhoff atque

³ Tymphaico Hermolaus Barbarus coll Theophr¹ tymphaigo
 B tymphaico coll

^a Sarda would be strong calcium montmorillonite, Umbrian earth, some kaolinite, and *saxum*, bentonite Cf R H S Robertson, *Class Rev*, LXIII, 51-3 K C Bailey thinks *saxum* is quicklime

^b Cf § 44

from Sardinia, is only used for white fabrics, and is of no use for cloths of various colours, it is the cheapest of all the Cimolus kinds, more valuable are the Umbrian and the one called 'rock' ^a The peculiarity of the latter is that it increases in size when it is steeped in liquid, consequently it is sold by weight, whereas Umbrian is sold by measure Umbrian earth is only employed for giving lustre to cloths It will not be out of place to touch on this part of the subject also, as a Metilian law referring to fullers still stands, the law which Gaius Flaminius and Lucius Aemilius as censors put forward ^{220 B C} to be carried in parliament so careful about everything were our ancestors The process then is this the cloth is first washed with earth of Sardinia, and then it is fumigated with sulphur, and afterwards scoured with Cimolian earth provided that the dye is fast, if it is coloured with bad dye it is detected and turns black and its colour is spread by the action of the sulphur, whereas genuine and valuable colours are softened and brightened up with a sort of brilliancy by Cimolian earth when they have been made sombre by the sulphur The 'rock' kind is more serviceable for white garments, after the application of sulphur, but it is very detrimental to colour In Greece they use Tymphaea gypsum instead of Cimolian earth

LVIII There is another cretaceous earth ^b called *Silversmiths' earth* as used for polishing silver, but the most inferior kind is the one which our ancestors made it the practice to use for tracing the line indicating victory in circus-races and for marking the feet of slaves on sale that had been imported from over-seas, instances of these being

Publium Antiochium,¹ mimicae scaenae conditorem, et astrologiae consobrinum eius Manilium Antiochum, item grammaticae Stabium Erotem
 200 eadem nave advectos videre proavi sed quid hos referat aliquis, litterarum honore commendatos? talem in catasta videre Chrysogonum Sullae, Amphionem Q Catuli, Hectorem² L Luculli, Demetrium Pompei, Augenque Demetri, quamquam et ipsa Pompei credita est, Hipparchum M Antoni, Menam et Meneciaten Sexti Pompei aliosque deinceps, quos enumerare iam non est, sanguine
 201 Quiritium et proscriptionum licentia ditatos hoc est insigne venalibus gregibus obprobriumque insolentis fortunae quos et nos adeo potui rerum vidimus, ut praetoria quoque ornamenta decerni a senatu iubente Agrippina Claudii Caesaris videremus tantumque non cum laureatis fascibus remitti illo, unde civitatis pedibus advenissent

¹ Antiochium *O Jahn* lucilium *cd Par* 6801 lochium *rell*

² Hectorem *Urlichs, Dellefsen* interfectorem *cd Par Lat* 6797, *cd Tolet* rectorem *rell* interfectorem, Heronem *edd vett* Heronem *ed Basil*

^a This would be Publius Syrus, fl c 45 B C

^b Probably father or grandfather of Manilius who wrote the extant *Astronomica*

^c Teacher of Brutus and Cassius

^d From the period 80-30 B C

^e Demetrius of Gadara whose native city, destroyed by the Jews, was rebuilt by Pompey at Demetrius' request

Publius of Antioch^a the founder of our mimic stage and his cousin Mamilus^b Antiochus the originator of our astronomy, and likewise Staberius Eios^c our first grammarian, all of whom our ancestors saw brought over in the same ship. But why need anybody mention these men, recommended to notice as they are by their literary honours? Other instances^d that have been seen on the stand in the slave market are Chrysogonus freedman of Sulla, Amphion freedman of Quintus Catulus, Hector freedman of Lucius Lucullus, Demetrius^e freedman of Pompey, and Auge freedwoman of Demetrius, although she herself also was believed to have belonged to Pompey, Hipparchus freedman of Mark Antony, Menas^f and Menecrates freedmen of Sextus Pompeius, and a list of others whom this is not the occasion to enumerate, who^g have enriched themselves by the bloodshed of Roman citizens and by the licence of the proscriptions^h. Such is the mark set on these herds of slaves for sale, and the disgrace attached to us by capricious fortune!—persons whom even we have seen risen to such power that we actually beheld the honour of the praetorship awarded to them by decree of the Senate at the bidding of Claudius Caesar's wife Agrippina,ⁱ and all but sent back with the rods of office wreathed in laurels to the places from which they came to Rome with their feet whitened with white earth!^j

^f Admiral of Sextus Pompeius c. 40 B.C. He deserted twice to Octavian. Hipparchus likewise deserted to Octavian. Menecrates killed himself after ill success under Menas against Octavian's fleet, 38 B.C.

^g Especially Chrysogonus and perhaps Hipparchus.

^h By Sulla in 82 and by Antony, Octavian, Lepidus in 43 B.C.

ⁱ She married Claudius in A.D. 49,

^j See § 199

PLINY NATURAL HISTORY

202 LIX Praeterea sunt, genera terrae proprietatis suae, de quibus iam diximus, sed et hoc loco reddenda natura ex Galata insula et circa Clupeam Africae scorpiones necat, Bahianis et Ebusitanis serpentes

NOTE ON THE PAINTERS NAMED ARISTIDES

It would appear that an elder Aristides (XXXV 75, 108 111, and 122²—the statuary of XXXIV 50 and 72 may be the same) had as pupils his sons Nicomachus (XXXV 108 109), Niceros (111) and Ariston (110, 111), and two others (not sons), namely Euphranor (111, 128) and Antorides (111)

LIX Moreover there are other kinds of earth with a special property of their own about which we have spoken already, but the nature of which must again be stated here soil taken from the island of Galata and in the neighbourhood of Clupea in Africa kills scorpions, and that of the Balearic Islands and Iviza is fatal to snakes

III 78
V 42

Note however that the reading *Aristidis* in XXXV 108 is uncertain and that Nicomachus is not mentioned in 111 Nicomachus had a son and pupil the younger Aristides (A of Thebes 98-100, 110) who was thus grandson of A the elder The younger is named also in XXXV 24, and VII 126 Pliny shows some confusion of the two

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Latin Authors

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